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Compendium of Accessibility Guidelines, Indicative Norms and Best Practices for Persons with Disabilities

Accessibility refers to the design of products, devices, services, or environments for persons with disabilities (PwDs). The concept of accessible design ensures both "direct access" (i.e. unassisted) and "indirect access" meaning compatibility with a person's assistive technology (for example, computer screen readers).

Accessibility is not to be confused with usability, which is the extent to which a product (such as a device, service, or environment) can be used by specified users to achieve specified goals with effectiveness, efficiency and satisfaction in a specified context of use. It is strongly related to universal design which is the process of creating products that are usable by people with the widest possible range of abilities, operating within the widest possible range of situations. This is about making things accessible to all people (whether they have a disability or not).

Accessibility is a very important part of the inclusion of PwDs. An accessible barrier free environment is the first step towards fulfilling the right of PwDs to participate in all areas of community life. Accessibility is a very broad term covering all aspects of assuring that disabled people can participate and have the same choices as non-disabled community members. This includes: access to transportation; election access; access to water supply and sanitation; technology access; appropriate sources of communication and media to ensure information; and an infrastructure that breaks down all physical barriers preventing equal access for PwDs as the members of a community.

The report has three major sections. The first section gives Basic Guiding Principle which provides the guidelines and standard norms for the built-in environment / construction keeping in view the barrier free access of PwDs to these infrastructures. The next major section – Department Specific Measures is for the specific use of the department. The departments are requested to follow 2 paths – Firstly, the basic principles of accessibility to be complied and secondly use the self assessment checklist to find out the specific gaps each of the department may have. The final section suggests the nationally and internationally available best practices which can be adapted /adopted as the case may be. Though the information for the second section of the document would be prepared by the individual departments with the assistance of an accessibility expert after the due process of access audit, the entire document would form a baseline for all departments.

Section I

Basic Guiding Principles

Section I: Basic Guiding Principles

The three accessibility guidelines brought out by various Ministries include the C.P.W.D. design guidelines published by the Ministry of Urban Development, 'Planning a Barrier Free Environment' published by the Office of the Chief Commissioner, Ministry of Social Justice and Empowerment and the Accessibility chapter in the National Building Code by the Bureau of Indian Standards. According to a survey undertaken by AccessAbility, only 11% of architects were aware and used either of these to get information about accessible design. Most relied on the internet for information. This is so because all of these are guidance and none are mandated in India¹.

PwD Act 1995

The PwD Act 1995, has specific provisions mandating a standard norm for built-in environment that need to be observed while construction of any public building as well as any public utility building. The relevant portion of the act is depicted below;

Section 30: Appropriate Governments to prepare a comprehensive education scheme providing for transport facilities, supply of books, etc. – Without prejudice to the foregoing provisions, the appropriate Governments shall by notification prepare a comprehensive education scheme which shall make provision for –

- a) *transport facilities to the children with disabilities or in the alternative financial incentives to parents or guardians to enable their children with disabilities to attend schools;*

Section 38: Appropriate governments and local authorities shall by notification formulate schemes for ensuring employment of persons with disabilities, and such schemes may provide for-

- d) *health and safety measures and creation of a non-handicapping environment in places where persons with disabilities are employed.*

Section 44: Non-discrimination in transport – Establishments in the transport sector shall, within the limits of their economic capacity and development for the benefit of persons with disabilities, take special measures to-

- a) *adapt rail compartments, buses, vessels and aircrafts in such a way as to permit easy access to such persons*
- b) *adapt toilets in rail compartment, vessels, aircrafts and waiting rooms in such a way as to permit the wheel chair users to use them conveniently.*

Section 45: Non-discrimination on the road – The appropriate Governments and the local authorities shall, within the limits of their economic capacity and development, provide for –

- a) *installation of auditory signals at red lights in the public roads for the benefit of persons with visually handicap;*
- b) *causing curb cuts and slopes to be made in pavements for the easy access of wheel chair users;*
- c) *engraving on the surface of the zebra crossing for the blind or for persons with low vision;*

¹ http://www.dnis.org/print_features.php?features_id=182, 20/10/15

- d) *engraving on the edge of railway platforms for the blind or for persons with low vision'*
- e) *devising appropriate symbols of disability;*
- f) *warning signals at appropriate places.*

Section 46: Non-discrimination in the built environment – The appropriate government and the local authorities shall within the limits of their economic capacity and development, provide for –

- a) *ramp in public buildings;*
- b) *adaptation of toilets for wheel chair users;*
- c) *braille symbols and auditory signals in elevators or lifts;*
- d) *ramps in hospitals, primary health centers and other medical care and rehabilitation institutions*

The architects of the Disability Act were perhaps conscious of the fact that for creation of barrier free environment in educational institutions, vocational training centres, places of work and in other public places, special designs of buildings and special technologies would need to be developed. *Therefore, Section 48 the Act calls upon the appropriate governments and local authorities to promote and sponsor research, Inter alias, in the onsite modifications in offices and factories.*

Public Transport

Transportation is an extremely important policy issue for PwDs, who have consistently described how transportation barriers affect their lives in important ways. The more severe the disability, the more serious are the transportation problems.

Coloured by this perspective, many policy analyses ignore the fact that most travellers with disabilities, as is true for travellers in the world at large, make the majority of their trips in private vehicles and rely heavily on walking to facilitate their use of all modes of travel. A narrow policy focus tends to limit discussions of the barriers to both auto use and pedestrian travel while slighting the connection between transportation programs and other important policy initiatives, from land use planning to human and medical service delivery.

This report makes a clear distinction between the kinds of transport services and facilities that are required by regulations or law and those that are required to address the far larger mobility needs of most PwDs. The report addresses local ground transportation; beyond its scope are issues of air, sea, and intercity travel for PwDs.

Enabling and encouraging access to transport for PwDs delivers widespread benefits across government, through widening employment opportunities; through access to healthcare and education; and by enabling PwDs to participate more in society. The SSUPSW should likewise be working with other departments to improve policy on accessibility for PwDs, and with local government to promote the development of barrier free environment for PwDs.

Road Transport

Roads are quite unsafe for people with disability in the country. There are hardly any footpaths in the country. This is problematic for pedestrians in general, and even more for PwDs. Crossing a road is next to impossible for people with visual disabilities. There are also difficulties faced by people with hearing disabilities and other disabilities in walking, crossing or driving on the roads. Most of the subways, foot-over bridges, etc. remain inaccessible for PwDs. The Disability Act, 1995 mandates disabled-friendly roads, streets, etc. It talks of audio signals for visually impaired people at the crossings. In spite of the act coming into effect since 1996, i.e. almost 20 years bygone the road conditions have hardly changed. Couple with it there has been precious little efforts made by the municipalities, corporations, urban development authorities to create appropriate awareness on road safety related to people with special needs.

Most disabled people travel in regular buses for point to point services within the city. The ease of travelling in the bus itself is a challenge faced by them due to the negative attitude of the bus conductors as well as the drivers. The National Road Transport Policy does not take into account the concerns of disabled people. The Motor Vehicles Act has no mention of wheelchair accessibility as a condition for manufacturing of public transport vehicles.

1. *Viklangjano keliye riyayti dar par yatra sambandhi yojana* - The scheme belonging to govt. of Bihar is available to PwDs having disability 40% and above. The scheme subsidizes an individual with disability the travel by bus within the state of Bihar by State Transport.
2. *Transport facility for Children with Special Needs to attend school*
3. *Access Aisle* - An accessible pedestrian space between elements, such as parking spaces, seating and desks, that provides clearances appropriate for use of the elements.
4. *Curb* - A side barrier to a trafficable surface
5. *Curb Ramp* - A short ramp cutting through a curb or built up to it.
6. *Grab Bars* - A bar used to give a steadying or stabilizing assistance to a person engaged in a particular function.
7. *Handrails* - A rail used in circulation areas such as corridors, passageways, ramps and stairways to assist in continuous movement.

Railways

The Ministry of Railways has more recently brought in several guidelines that include accessibility aspect in a far more comprehensive manner.² They stem from ticket concession, special railway ID card for PwDs, accessible railway station, wheelchair and carriage facility to allowance of escort and guide dog. The details of this can be obtained from commercial circular no. 18 of 2015. Excerpt for other facility is mentioned below;

1. Separate counters are earmarked at various Passenger Reservation System (PRS) centres for dealing with the reservation requisitions received from physically handicapped persons, Senior Citizens, Ex. MPs. MLAs. Accredited journalists and freedom fighters, if the average demands per shift not less than

² However there is immense room for improvement when compared with American Disability Act. It may be noted that Indian Railways is considered the second largest rail network in the world, which makes it more imminent that Indian railways should become benchmark in accessibility for other countries to follow.

120 tickets. In case there is no justification for earmarking of an exclusive counter for any of these categories of persons including handicapped persons, one or two counters depending upon the total demand are earmarked for dealing with the reservation requests for all these categories of persons.

2. A reservation quota of two sleeper class berths has been earmarked in all trains running on non-suburban sections for handicapped persons performing their journey on handicapped concessional ticket. The person accompanying the handicapped person as escort is also allotted the berth out of this quota.
3. In sub-urban trains, separate accommodation for handicapped persons has been earmarked.
4. The following instructions have been issued for convenience of handicapped persons;
 - a) Instructions have been issued that on trains where SLRD coaches have been provided in the trains' composition, the SLRD may be defined in the PRS system for booking of berths by handicapped persons and their escort travelling on handicapped concessional ticket. In these trains the existing handicapped quota of two sleeper class berths (lower berth for handicapped person and upper berth for their escort shall be withdrawn and merged with the general reservation quota).
 - b) Instructions also exist that in the tickets issued through Computerized Passenger Reservation System, to extent feasible, one lower berth should be allotted to the handicapped person and the person accompanying the handicapped person as escort should be allotted middle/upper berths near the handicapped person subject to availability of accommodation.
 - c) After departure of the train, if there are vacant lower berths available in the train, and if any physically handicapped person booked on the authority of handicapped concessional ticket, who has been allotted upper/middle berth, approaches for allotment of vacant lower berth to them making necessary entries in the chart.

Additional Facility

- a) For the convenience of the physically challenged persons, facilities like Wheel Chairs have been provided at all important stations on the Indian Railways.
- b) In allotment of STD/PCO booths operated from the Railway Stations, 25% booths have been reserved for physically handicapped persons (including blind disability 40% and above).

Concession in Fare

As per Railway rules, concession in fares is admissible to four categories of disabled persons, and that too in extreme cases. The names of these four categories, and the element concession admissible are as under:

Sr. No.	Category of Persons	Element of Concession		
		Single journey tickets	Season tickets	
			I class	II class
1.	Orthopedically Handicapped / Paraplegic persons who cannot travel without an escort	75% in Second, Sleeper, First, AC Chair Car & AC 3-tier and 50% in AC 2-tier and AC First Classes	50%	50%
2.	Mentally retarded persons who cannot travel without an escort	75% in Second, Sleeper, First, AC Chair Car & AC 3-tier and 50% in AC 2-tier and AC First Classes	50%	50%
3.	Completely blind persons travelling alone or with an escort	75% in Second, Sleeper, First, AC Chair Car & AC 3-tier and 50% in AC 2-tier and AC First Classes	50%	50%
4.	Totally deaf & dumb persons (both afflictions together in the same person) travelling alone or with an escort	50% in Second, Sleeper, First classes	50%	50%

Airlines

One of the most judicious accessibility norms in the government sector has been adopted by the Ministry of Civil Aviation regarding airline travel of PwDs. The norms have been fully captured from the Americans Disability Act including the widest definition of disability in accordance with UNCRPD. The circular covers from the time a PwD enters the airport until such time that s/he finishes the journey to the final destination. The circular has covered all aspects of health, security, infrastructural facilities within the airport and in the aircraft to training of the staff regarding handling travellers with special needs. The details can be found in the Civil Aviation Requirements Section 3 – Air Transport series “M” part I dated 28th Feb. 2014 further amended on 30th July 2015.

Barrier Free Environment

The manual “Planning Barrier Free Environment” published in 2001 is concerned with access to, movement within and around, buildings, by PwDs. The specifications of this manual are intended to make buildings and facilities accessible to and usable by people with such physical disabilities as the inability to walk, difficulty in walking, reliance on walking aids, blindness and visual impairments, speech and hearing impairments, in-coordination, reaching and manipulation disabilities, lack of stamina, difficulty interpretation and reacting to sensory information, and extremes in physical size³.

Government Institutions

The government of Bihar is yet to implement schemes and policies under accessibility. However, the state government has issued directions to remove obstructions at public places to ensure that disabled people have better access⁴.

Access to Vote

The Election Commission of India has urged that the Government/Local Authorities may provide permanent ramps in the public buildings in which polling stations for elections are located. Other facilities to be provided at the polling station for the benefit of the electors with disability include the following⁵;

- i. The personnel at the polling station to ensure that physically challenged electors are given priority for entering the polling station, without having to wait in the queue for other electors and all necessary assistance as may be required should be provided to them at the polling station
- ii. Full facility should be provided for such electors to take their wheel- chair inside the polling station. In the polling stations where permanent ramps have not been provided, temporary ramps should be provided
- iii. The polling personnel should be specifically briefed about the provisions of Rule 49N of the Conduct of Elections Rules, 1961, which provides for permitting a companion to accompany a blind/infirm elector to assist him/her to cast the vote

³ *Planning Barrier Free Environment, Office of the Chief Commissioner for Persons with Disabilities, 2001*

⁴ <http://www.accesshub.org/state-policy-information/bihar-state-level-policy#top>, 20/10/15

⁵ http://eci.nic.in/eci_main/ElectoralLaws/OrdersNotifications/disabled%20right%20group%20W.P.%20No.%20187%20of%2004%20.pdf, 26/10/15

- iv. At the training classes for the polling personnel, they should be sensitized about the special needs of the disabled, for courteous behaviour towards them and for providing necessary support to them at the polling station
- v. Electors with speech and hearing impairment should also be given special care as in the case of other disabled persons.

Apart from the facilities for the physically challenged electors as enumerated above, the publicity should also cover the facility of Braille signage being available on the EVMs.

Accessibility to Public Utilities

There are many out of which few public utilities that are crucial have been considered below;

Ramp - An inclined way connecting one level with another. Handrails should be provided on stairs and ramps.

Signage - The main purpose of signs should be to provide a clear designation of places, warnings and routing information. Where the building is designed in compliance with the “Planning Barrier Free Environment” manual, the attention of all users should be drawn to the facilities in order that the PwDs are made aware of the existence of suitable provisions for them. The Symbol of Access should be permanently and conspicuously displayed to indicate the location of the various facilities in the building. Directional signs should be displayed at main lobbies or passageways and at points where there is a change of direction, to direct PwDs, to the various facilities such as lifts, entrances, telephone booths, toilets, car park, etc.

Public Telephone - Where payphones are provided, at least one payphone should be made accessible. A seat adjacent to the payphone is recommended for the ambulant disabled but should not impede the approach by the wheelchair user to the telephone.

Toilets - Signage at washroom entrance should be clearly visible and should comply with the Symbol of Access. At every level of the building where toilets are required to be provided, at least: One individual accessible washroom for the wheelchair users should be provided for both the male and the female; or One accessible toilet cubicle for wheelchair users shall be provided in both the male and the female toilets.

Urinals - Where urinals for the ambulatory disabled are provided, they should comply with the urinals described in the “Planning Barrier Free Environment” manual.

Washrooms - Accessible washrooms means with other essential accessories (mirror, waste bin, soap, towel and hand dryer) it must have accessible doors, washbasins, handrails, grab bars and toilets as mentioned in the “Planning Barrier Free Environment” manual.

Entertainment - Entertainment for PwDs to name a few includes Park & Gardens, Amusement Parks, Zoological Parks, Cinema Halls & multiplexes, Auditoriums, Markets & Shopping Malls and Restaurants. All these currently have only accessible pathways, toilets, lifts and doors. All these amenities should be built up as per the standards specified in the document entitled “Planning Barrier Free Environment”⁶.

Religious places - Although participation in organized religion provides many health and psychological benefits, fewer people with disabilities attend religious services than people without disabilities. Some models

⁶ <https://www.google.co.in/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0CBoQFjAAahUKEwjQOP-vl-zlAhVkW6YKHRIOCaY&url=http%3A%2F%2Fwww.ccdisabilities.nic.in%2Fcontent%2Fen%2Fdocs%2FPlanningBarrierFreeEnvironment.doc&usq=AFQjCNG1RqD0mmcHUMIjunPOCSuXoeQqTq&bvm=bv.106379543,d.dGY>, 31/10/15

of disability suggest that one possible cause for this disparity may be the influence of environmental barriers in religious buildings.

Despite legislation designed to decrease environmental barriers to participation in public places, barriers still exist that prevent some of these places from being accessible and useable. Common barriers encountered by wheelchair users in the community are rudeness, narrow aisles, lack of ramps, bad weather, poorly designed door handles or heavy doors, lack of curb cuts and poor pedestrian crossings, inaccessible bathrooms, lack of parking, uneven surfaces, and goods & services placed higher than a reaching range. Physical and attitudinal barriers present in places of worship may be one possible explanation of lowered attendance rates among PwDs. Common barriers to access included transportation problems, parking problems, the rise of a building, particularly involving stairs, the restrooms, hearing systems and lighting, and the aesthetic qualities of the buildings⁷.

Accessibility Guidelines for Hotels

The Ministry of Tourism in July, had released its guidelines which required all hotels to become disabled friendly by September 2010. The guidelines make it mandatory for hotels to have atleast one room for disabled people, at least one accessible unisex toilet in the lobby and access to atleast one restaurant. It also includes ramps with anti slip floors, attached bath and designated parking. The minimum door width of rooms meant for PwDs should be one metre to allow wheelchair access. It also states that furniture should be of low height, cupboards should have sliding doors with low clothes hangers. Rooms should also have audible and visible alarm systems⁸.

Hotel & Eating Outlets - Very few hotels have provisions of access available to PwDs which mainly include accessible doors, toilets, lifts, ramps etc. It should be made mandatory while giving permission to start the hotel or/and restaurant that it must have provision of entertaining guest with special needs.

Model Building Bye Laws

The Annual Report of Ministry of Urban Development mentions: Under the title 'Promotion of Non-Handicapping Environment for Disabled and Elderly Persons', it states: *"Effort will be made to ensure adoption of Bye-laws¹ and space standards by all States, municipal bodies, and Panchayati Raj Institutions in the country. These authorities will ensure that all newly constructed buildings for public-use are barrier-free. It further goes on to add that the Ministry has prepared Model Building Bye-laws, which contain provisions for improving access to various public buildings by disabled and elderly persons. These building bye-laws have been sent to the State Governments, Union Territories, Delhi Development Authority, Municipal Corporation of Delhi, New Delhi Municipal Committee etc. for adoption. So far, Maharashtra, Tripura, Gujarat, Meghalaya, Karnataka, Bihar, Andhra Pradesh, National Capital Territory of Delhi and Chandigarh have adopted the same.*

⁷ <http://dsq-sds.org/article/view/720/897>, 24/10/15

⁸ http://www.dnis.org/print_news.php?news_id=934, 20/10/15

All States have been asked to appoint an Officer in every District to bring to notice cases of non-compliance to the concerned authorities⁹.

Standard norms for minimum access

It will be ideal to have all buildings completely accessible but following are the minimum access needs¹⁰:

Type of building	Access provision
Single detached, single dwelling units	A minimum of 2 percent of the total number of units to be constructed with barrier free environment
- Staff housing, multiple dwelling and high rise residential units.	A minimum of 1 unit for every 25, plus 1 additional unit for every 100 units thereafter.
Tenement houses, row houses, apartments and town houses	A minimum of 1 unit for up to 150 units, and a minimum of 1 additional unit for every 100 units thereafter to be accessible
- Post offices, banks and financial service institutions	A minimum of 1 lowered service counter on the premises. A minimum of 1 lowered automatic teller machine (ATM) / cash disbursement point on the premises. Stamp vending machine.
- Shop-houses and single storey shops	Accessible shopping arrears
- Places of worship	Entrances and exits and main area of worship to be accessible Temples: access to shrines and courtyards Mosques: access to area for ablution Churches: access to confessionals, and chapels.
- Food centres	A minimum of 1 table without stools or seats attached to the floor for every 10 tables. A minimum of 2 tables without stools or seats attached to the floor for the whole premises Accessible entrance
Community centers, village halls, auditoria, concert halls, assembly halls, cinemas, theaters and other places of public assembly.	Accessible entrance exists, aisles and main community or public gathering areas Accessible toilet facilities should be nearby Seating for persons with disabilities to be accessible from main entrances and lobbies. Various seating/viewing choice to be provided for persons in wheelchairs throughout the main seating area A minimum of 2 wheelchair spaces for seating capacity up to 100 seats. A minimum of 4 wheelchair spaces for seating capacity for over 100 to 400 seats.

Communication

Being able to communicate is something many of us take for granted. Speaking and understanding, reading and writing are skills that most of us use every day. We communicate to express our feelings, thoughts and opinions, to ask questions, and to give information. We do this with lots of people and for many different reasons. For example, we might ask for things we want in a store, discuss our medical concerns with a doctor, order a meal in a restaurant, interact with a bank teller about our finances or call a taxi company to book a ride. The basis of good communication includes a respectful attitude and being a good listener. These basic skills are more important than ever for people who have communication disabilities because their disabilities are typically not well understood by the public.

Communication Disabilities

When someone has a communication disability, there are four main areas that can be affected. Depending on the nature of the disability, one or more of these areas can be involved. They include a person's ability to:

- ❖ Speak

⁹ Accessibility to Built Environment and Means of Transport for People with Disabilities in India

¹⁰ Guidelines & Space Standards for Barrier Free Built Environment For Disabled And Elderly Persons, Ministry of Urban Affairs & Employment, India 1998

- ❖ Understand what others are saying
- ❖ Read
- ❖ Write

Some of the main types of communication disabilities affect the following:

1. **Hearing** - For people who are deaf or have a hearing loss it can be difficult or impossible to hear what a person is saying and sometimes their own speech may not be easily understood.
2. **Movement** - People who have disabilities such as cerebral palsy, multiple sclerosis or amyotrophic lateral sclerosis may have difficulty moving their muscles to speak, using gestures, turning pages in a book and writing.
3. **Cognition** - People who have intellectual disabilities from birth, or acquire Alzheimer's disease later in life, can have problems remembering, learning, understanding, or problem-solving which can make communication challenging.
4. **Language** - People who have aphasia after a stroke or accident may have difficulty understanding others, speaking, reading and writing. The experience of aphasia is similar to being in a foreign country where you know what you want but you have problems understanding others or expressing yourself. In addition to having communication challenges, many people have multiple disabilities. People who are deafblind have limited hearing and vision. They are unable to use these senses to receive communication. People who have cerebral palsy may be unable to speak, walk or physically manipulate objects. People who have autism may experience challenges learning and using language, as well as interacting with other people. Regardless of the cause of the disability, all people who have communication disabilities are individuals and communicate in their own ways. They can also communicate more effectively when they are given appropriate supports. And that's where you come in.

Some ways people communicate:

1. Speech (speech may be unclear)
2. Body language and facial expressions
3. Gestures (e.g., wave to signal goodbye)
4. Pointing or looking at objects and people
5. Sign Languages (e.g., American Sign Language, Signed Exact English, Indian Sign Language and Adapted Sign Language)
6. Writing, typing or drawing
7. Cued speech
8. Spelling on a letter board, which is usually custom-made for an individual
9. Pointing to pictures symbols and/or written words on a communication display, which is custom-made for an individual
10. Using a communication device, which is usually obtained through an augmentative and alternative communication clinic

If the person is deaf or has a hearing loss

- ✓ Make sure the person is looking at you before you start talking and that he/she can see your mouth.

- ✓ Find out what the person wants to use when communicating with you. S/he may want to use his/her own amplifier or communication device or may request that you write down what you are saying.
- ✓ Speak clearly and at a moderate pace. Do not shout.
- ✓ If what you have said is not understood, say it in another way rather than repeat it.
- ✓ Upon request, arrange to have a sign language interpreter (i.e., a person who translates spoken language into sign language) or a captioner (i.e., a person who writes or types what is being said). Contact The Canadian Hearing Society (CHS) for these services.

If the person is deaf and blind

- ✓ A person who is deafblind may require an intervenor. An intervenor provides visual and auditory information to the person using their preferred sign language. Contact the Canadian Deafblind Association, Ontario Chapter for these services.
- ✓ If the person uses a communication assistant
- ✓ A communication assistant is someone who interprets a person's impaired speech or assists a person who uses a communication display or device.
- ✓ Ensure that the person who accompanies an individual has been authorized to assist him/her with communication. Once you have confirmed the role, accept the person's messages as conveyed to you by the assistant.
- ✓ Speak directly to the individual, not to the assistant.
- ✓ Observe the person directing the assistant so that you know he/she is communicating and approving their messages. In some cases, an assistant may support the person selecting words or pictures on his/her display or device or putting these items into sentences. If you are unsure about a message, ask, "Is that what you wanted to say?"
- ✓ If the person does not have a communication assistant, be prepared to negotiate communication assistant services at the request of the individual. Ask the individual if s/he has a person who can assist them or a speech language pathologist who knows how s/she communicates.

Special Situations

1. **Communicating over the telephone** - Find out how the person wants to communicate with you on the telephone. S/he might want to use a device or a communication assistant. Alternatively, the individual might want you to ask questions to which s/he can answer, "yes" or, "no." The person may prefer to use e-mail or fax. If you have a receptionist, ensure s/he knows how the person will communicate over the telephone.
2. **Written communication** - People with physical disabilities may have difficulty writing and may require a note-taker to transcribe or take notes. Note-takers are often available in educational settings.
3. **Making text materials accessible** - Ensure that text information is in formats that the person can access and understand. Some individuals may want information in plain language, enlarged font, electronic formats, Braille or they may require the assistance of someone who can help in reading and understanding documents.
4. **Decision-making and consent** - Depending on the type of decision to be made (e.g., health/medical, financial or personal), as well as skills and experience, most people with communication disabilities make their own decisions or, like everyone else, they might rely on others for advice. In some special

circumstances (e.g., a healthcare or legal setting), you may need to know if the person has a formal supported decision-making agreement that defines the person(s) who can assist in making decisions and a process that fully respects the individual's values, beliefs, experiences and preferences. Some individuals have a Power of Attorney whereby someone can make decisions on their behalf.

5. **Obtaining signatures** - Not being able to physically hold a pen does not mean that a person cannot approve or sign a document. People who cannot write and who understand the meaning of a document may use an alternative mode for signing. Alternatives range from an X, a stamp, a thumb-print, or their authorization of a legally-appointed person to sign on their behalf.
6. **Privacy** - Be mindful of the individual's right to privacy. While the person may rely on a support person to assist in daily activities, she/he may not want to share aspects of their personal life with that person. It is the person's responsibility to negotiate privacy agreements with their communication assistant. However, in some situations, your organization may require a communication assistant to sign an agreement to protect yours or other people's privacy (e.g., group counseling).
7. **Communicating in Essential or Emergency Situations** - People with communication disabilities need to be able to communicate quickly and effectively in emergency situations with first responders such as police, health care workers, fire fighters, etc. If the person does not have access to their own communication board or device, use "yes" and "no" questions to get information.
8. Example: You want to identify the source of a person's pain. Say, "Do you feel any pain?" When the person responds with a yes, confirm you have understood. Say, "You told me "yes", you are in pain." Then ask, "Where is your pain?" Wait. If the person cannot point with a finger, hand or eyes, suggest body parts. Say, "Does your head hurt?" When the person responds with a "no," ask another question.
9. Where communication is of a highly significant and critical nature, (e.g., within legal, health, police, emergency contexts), organizations should consider:
 - a) Teaching a core group of internal staff to support communication access.
 - b) Having context-specific resources such as communication displays and accessible call bells.

Braille

Braille is a system of raised dots that can be read with the fingers by people who are blind or who have low vision. Teachers, parents, and others who are not visually impaired ordinarily read Braille with their eyes. Braille is not a language. Rather, it is a code by which many languages—such as English, Spanish, Arabic, Chinese, and dozens of others—may be written and read. Braille is used by thousands of people all over the world in their native languages, and provides a means of literacy for all. The specific code used in the United States has been English Braille, American Edition but in 2016 onward the main code for reading material will be Unified English Braille, a code used in seven other English-speaking countries.

Bharati Braille is a largely unified Braille script for writing the languages of India. When India gained independence, eleven Braille scripts were in use, in different parts of the country and for different languages. By 1951 a single national standard had been settled on, Bharati Braille, which has since been adopted by Sri Lanka, Nepal, and Bangladesh.

Just as printed matter can be produced with a paper and pencil, typewriter, or printer, Braille can also be written in several ways. The Braille equivalent of paper and pencil is the slate and stylus. This consists of a slate or template with evenly spaced depressions for the dots of Braille cells, and a stylus for creating the individual braille dots. With paper placed in the slate, tactile dots are made by pushing the pointed end of the stylus into the paper over the depressions. The paper bulges on its reverse side forming dots. Because of they are inexpensive and portable, the slate and stylus are especially helpful for carrying to jot quick notes and for labeling such things as file folders.

Braille is also produced by a machine known as a braillewriter. Unlike a typewriter which has more than fifty keys, the braillewriter has only six keys, a space bar, a line spacer, and a backspace. The six main keys are numbered to correspond with the six dots of a braille cell. Because most braille symbols contain more than a single dot, combinations of the braillewriter keys can be pushed at the same time. Bharati braille alphabets use a 6-dot cell with values based largely on English Braille. Letters are assigned as consistently as possible across the various regional scripts of India as they are transliterated in the Latin script, so that, for example, Hindi, Urdu, Bengali, and English are rendered largely the same in braille. There are 18 Braille presses in India.

Technological developments in the computer industry have provided and continue to expand additional avenues of literacy for braille users. Software programs and portable electronic braille devices allow users to save and edit their writing, have it displayed back to them either verbally or tactually, and produce a hard copy via a desktop computer-driven braille embosser. Because the use of computers is so common in school, children learn both the braille contractions and also how to spell words out letter for letter so they can spell and write using a keyboard.

- ❖ All departments' important documents and circulars, notifications as well as any material for public utility must be available in Braille

Tactile

Tactile has to do with the sense of touch. Converting a visual graphic to an appropriate tactile graphic is not simply a matter of taking a visual image and making some kind of tactile photocopy. Instead, the visual graphic first need to be redesigned and modified to remove spatial clutter and complexities. The image then need to be properly labeled using Braille and standardized symbols to make sense for the reader Lastly, the image is printed in tactile format using various methods popularly through swell form, thermoform or a Braille embosser The type and texture quality of tactile graphics produced is different in each of this methods as the process and the sheet used is of different kind.

Communicating with Deafblind people

Deaf-blind people have many different ways of communication. The methods they use vary, depending on the causes of their combined vision and hearing loss, their backgrounds, and their education. Below are some of

the most common ways that deaf-blind people communicate. These methods described are used primarily in the United States¹¹.

1. **Signed Languages:** Some deaf or hard of hearing people with low vision use American Sign Language or an English-based sign language. In some cases, people may need to sign or fingerspell more slowly than usual so the person with limited vision can see signs more clearly. Sometimes the person with low vision can see the signs better if the signer wears a shirt that contrasts with his or her skin color (e.g., a person with light skin needs to wear a dark-colored shirt).
2. **Adapted Signs:** Some deaf-blind people with restricted peripheral vision may prefer the signer to sign in a very small space, usually at chest level. Some signs located at waist level may need to be adapted (e.g. signing “belt” at chest level rather than at waist level).
3. **Tactile Sign Language:** The deaf-blind person puts his or her hands over the signer’s hands to feel the shape, movement and location of the signs. People can use one-handed or two-handed tactile sign language. People who grew up using ASL in the deaf community may prefer tactile ASL, while others who came from an oral background or learned signs later may prefer a more English-based tactile system.
4. **Tracking:** Some deaf-blind people with restricted but still usable vision (e.g., tunnel vision) may follow signs by holding the signer’s forearm or wrist and using their eyes to follow the signs visually. This helps them follow signs more easily.
5. **Tactile Fingerspelling:** Usually blind or visually impaired people who lose their hearing later, or deaf or hard of hearing people who have depended on their speech reading and do not know how to sign, prefer tactile fingerspelling because sometimes sign language can be difficult to learn. The deaf-blind person may prefer to put his or her hand over the fingerspelling hand, or on the signer’s palm, or cup his or her hand around the signer’s hand.
6. **Tadoma:** This is a way for deaf-blind people with little or no usable vision to speechread another person by touch. They put their thumb on the other person’s chin, and their fingers on the other person’s cheek to feel the vibrations of the person’s voice and the movement of their lips. This method is rarely used nowadays. Other deaf or hard of hearing people with usable vision use speechreading as well as their residual vision and hearing. They may use hearing aids, cochlear implants and/or assistive listening devices to help them hear and understand other people better.
7. **Screen Braille Communicator:** Some deaf-blind people use a Screen Braille Communicator (SBC). This is a small, portable device that enables them to communicate with sighted people. The device has a QWERTY keyboard with an LCD display on one side, and an eight-cell braille display on the other side. The sighted person types short text on the QWERTY keyboard. The deaf-blind person reads the printed text by placing his or her fingers on the braille display. He or she then uses the braille display to type back text. The sighted person can read the text on the LCD display.
8. **CapTel:** Some people with hearing and vision loss use CapTel to make telephone calls. Using a special phone, the CapTel USB, people can dial into a captioning service that types the other caller’s conversation onto a computer screen. Then, deaf-blind callers can read a conversation script on their

¹¹ http://www.aadb.org/factsheets/db_communications.html

screens in addition to listening to another caller on their telephones. The captions can be adjusted for color, size or font style on the screen.

9. **Braille Notetakers:** Deaf-blind people can also use braille notetakers to communicate with others who don't know braille or their communication system. Many braille notetakers can be connected with personal digital assistants (PDAs) that are commonly used by others.

10. **Print on Palm (POP):** The person communicating with the deaf-blind person prints large block letters on the other person's palm. Each letter is written in the same location on the person's palm. This is frequently a way for deaf-blind people to communicate with the public.

These are only a few of the many ways that deaf-blind people can communicate with each other and with others.

Web Accessibility

The web has evolved over the years to become the means of information and communication. Web is used by business units, government departments, education institutes, public and private sector enterprises to communicate with the end-users. Government bodies across different countries of the world use the web in the form of e-governance as a medium of information and communication with all their citizens. E-governance has also made it possible for PwDs to access information and communicate with different government departments. PwDs use different assistive technologies to browse the web. Like other citizens, they can submit their income tax returns online, enroll for distance learning courses, apply for jobs and even file a complaint.

National Informatics Centre (NIC) has formulated Guidelines for Indian Government Websites (GIGW). Along with standards for design, development, security, hosting, maintenance, GIGW includes guidelines for accessibility of information for persons with disabilities. GIGW has incorporated accessibility guidelines from the international accessibility standards: the World Wide Web Consortium's (W3C) Web Content Accessibility Guidelines (WCAG) 2.0. WCAG 2.0 enables web authors to make websites accessible to all. Implementing WCAG 2.0 will ensure that the web content is Perceivable, Operable, Understandable and Robust (POUR) for all users irrespective of the technology, device and situation of use.

Barrier Break Technologies has conducted an accessibility survey to evaluate the websites of 10 Indian Government entities at central as well as state level. The survey was conducted during the month of November 2012. This survey aims to review accessibility claims of Government websites. A combination of both automated and manual tests were performed by people with different types of disabilities, such as visual impairments, mobility impairments etc. as well as accessibility testers keeping WCAG 2.0 Level AA in mind. The results were disappointing and the findings revealed persons with disabilities found it difficult to access the web pages tested. Automated tests revealed that the pages failed to even meet with the minimum accessibility compliance requirements of WCAG 2.0. In addition, the tested pages lacked valid HTML and CSS markup¹².

¹² *Web Accessibility Survey Report for Indian Govt. Websites, Nov. 2012*

The Department of Information Technology website of Bihar complies with the requirements of WCAG 2.0¹³.

Education Services

Primary education

Guidelines of Inclusive Education of Children with Disabilities (IECD) each school is advised¹⁴:

- To ensure that no child with special needs is denied admission in Mainstream Education
- To monitor the enrolment in schools of disabled children
- To provide support through assistive devices and the availability of trained teachers
- To modify the existing physical infrastructure and teaching methodologies to meet the needs of all children including Children with Special Needs
- To ensure that 3% reservation of persons with disabilities is done in all institutions receiving funds from Government (Under The Persons with Disabilities Act, 1995)
- To ensure that all schools are made disabled friendly by 2020 and all educational institutions including hostels, libraries, laboratories and buildings will have barrier free access for the disabled
- To ensure availability of Study material for the disabled and Talking Text Books, Reading Machines and computers with speech software
- To ensure an adequate number of sign language interpreters, transcription services and a loop induction system will be introduced for the hearing handicapped students
- To revisit classroom organization required for the education of Children with Special Needs
- To ensure regular in-service training of teachers in inclusive education at the elementary and secondary level.

Bihar has made some progress in recent years in the provision of drinking water, and is now ranked above the median in India on this measure. However, the fact that roughly 10% of the primary schools lack access to drinking water facilities should be immediately attended to and given top priority so as to achieve its 100% level.¹⁵ One of the SSA programme objectives is to strengthen the school infrastructure.

Scheme for Stipends to Physically Handicapped Students - The Social Welfare Department provides monetary and other assistance to disabled students from class I to Post Graduate level provides Transport Allowance of Rs. 50 per month and Escort Allowance (for the severely disabled) Rs. 50 per month.

Secondary & Higher Secondary Education

Inclusive Education of the Disabled at Secondary Stage (IEDSS) – One of the objectives of the scheme is;

- ❖ All architectural barriers in schools are removed so that students with disability have access to classrooms, laboratories, libraries and toilets in the school.
- ❖ Students with disabilities will have access to support services like the appointment of special educators, establishment of resource rooms in every block.

¹³ https://www.bihar.gov.in/screen_reader_access, 20/10/15

¹⁴ <http://www.icbse.com/children-special-needs>, 26/10/15

¹⁵ http://www.ideasforindia.in/article.aspx?article_id=42, 21/10/15

University Education

The higher education institutions are generally categorized into two categories: general and professional/technical. Bihar has colleges and universities, both for general and technical education. To ensure the delivery of quality education, teachers' training is very important, and there are 35 teacher training centres in Bihar in 2011; there is an increase of 12 such institutions, between 2009 and 2011. This increase is compatible with the high enrolment ratio in primary and secondary education. The number of technical institutions has also increased in Bihar compared to the recent past. There were only 164 such private institutions in 2008 and 2009, but their number rose to 252 in 2011. There are 15 research institutes in Bihar, covering various disciplines.

The *Mukhya Mantri Nihshaktjan Shiksha Rin (Loan) Yojana* offers loans to students suffering from disabilities for pursuing higher professional education. These include degree, diploma or other equivalent recognised technical and commercial courses recognised by Government of India, State Government, Universities Grants extremely difficult to access health services in the country for various reasons. A person with Cerebral Palsy had once Commission, All India Council for Technical Education and Indian Council of Medical Research. The Bihar State Backward Class Finance and Development Corporation is the nodal agency for executing this scheme.

Health Services

Hospitals, clinics, Infrastructure, Doctor's, nurses and other staff training, Sign language interpreter, Separate queue. PwDs find it narrated his experience of trying to find a dentist in his area. He could not find a single dental clinic which was accessible. Some dentists also refused to treat him saying they do not have necessary equipments! It is a fact that most local clinics, health centres and pathological labs are inaccessible to PwDs¹⁶.

Barriers to health care¹⁷

People with disabilities encounter a range of barriers when they attempt to access health care including the following.

Prohibitive costs

Affordability of health services and transportation are two main reasons why people with disabilities do not receive needed health care in low-income countries - 32-33% of non-disabled people are unable to afford health care compared to 51-53% of people with disabilities.

Limited availability of services

The lack of appropriate services for people with disabilities is a significant barrier to health care. For example, research in Uttar Pradesh and Tamil Nadu states of India found that after the cost, the lack of services in the area was the second most significant barrier to using health facilities.

¹⁶ Health for Persons with Disabilities in India – Baseline Report Feb. 2009

¹⁷ <http://www.who.int/mediacentre/factsheets/fs352/en/>, 2nd Jun. 2016

Physical barriers

Uneven access to buildings (hospitals, health centres), inaccessible medical equipment, poor signage, narrow doorways, internal steps, inadequate bathroom facilities, and inaccessible parking areas create barriers to health care facilities. For example, women with mobility difficulties are often unable to access breast and cervical cancer screening because examination tables are not height-adjustable and mammography equipment only accommodates women who are able to stand.

Inadequate skills and knowledge of health workers

PwDs were more than twice as likely to report finding health care provider skills inadequate to meet their needs, four times more likely to report being treated badly and nearly three times more likely to report being denied care.

Addressing barriers to health care¹⁸

Governments can improve health outcomes for people with disabilities by improving access to quality, affordable health care services, which make the best use of available resources. As several factors interact to inhibit access to health care, reforms in all the interacting components of the health care system are required.

Policy and legislation

Assess existing policies and services, identify priorities to reduce health inequalities and plan improvements for access and inclusion. Make changes to comply with the UNCRPD. Establish health care standards related to care of persons with disabilities with enforcement mechanisms.

Financing

Where private health insurance dominates health care financing, ensure that people with disabilities are covered and consider measures to make the premiums affordable. Ensure that people with disabilities benefit equally from public health care programmes. Use financial incentives to encourage health-care providers to make services accessible and provide comprehensive assessments, treatment, and follow-ups. Consider options for reducing or removing out-of-pocket payments for people with disabilities who do not have other means of financing health care services.

Service delivery

Provide a broad range of modifications and adjustments (reasonable accommodation) to facilitate access to health care services. For example changing the physical layout of clinics to provide access for people with mobility difficulties or communicating health information in accessible formats such as Braille. Empower people with disabilities to maximize their health by providing information, training, and peer support. Promote community-based rehabilitation (CBR) to facilitate access for disabled people to existing services. Identify groups that require alternative service delivery models, for example, targeted services or care coordination to improve access to health care.

Human resources

Integrate disability education into undergraduate and continuing education for all health-care professionals. Train community workers so that they can play a role in preventive health care services. Provide evidence-based guidelines for assessment and treatment.

¹⁸ <http://www.who.int/mediacentre/factsheets/fs352/en/>, 2nd Jun. 2016

Data and research

Include people with disabilities in health care surveillance. Conduct more research on the needs, barriers, and health outcomes for people with disabilities.

WHO Recommendations¹⁹

In order to improve access to health services for PwDs, WHO:

- guides and supports Member States to increase awareness of disability issues, and promotes the inclusion of disability as a component in national health policies and programmes;
- facilitates data collection and dissemination of disability-related data and information;
- develops normative tools, including guidelines to strengthen health care;
- builds capacity among health policy-makers and service providers;
- promotes scaling up of CBR;
- promotes strategies to ensure that people with disabilities are knowledgeable about their own health conditions, and that health-care personnel support and protect the rights and dignity of persons with disabilities.

Police services

Police services are the first hand security for the citizen in India. It is often noticed that PwDs especially girls and women with disabilities are subject to sexual abuse. Abuse happens within the family, in institutions, in public places, religious places and also in the general gathering. In such circumstances, the institution of police needs to be extra sensitive in both lodging of the complaint as well as dealing with the miscreants. It is often noticed that the PwDs seldom approach the police stations with complaints with lack of confidence that they would be heard. Additionally, the deaf and hearing community finds it most difficult to file an FIR due to communication barrier and station officer's reluctance to call appropriate sign language interpreters. Majority of the cases they do not maintain a roster of such sign language interpreters. This calls for the following;

1. **Orientation to the staff** - Appropriate disability orientation must be given to all staff in the police station regarding types of disabilities and their specific needs. In addition they must be oriented to some of the most common type of abuse that PwDs face in various walks of life. The training must also include how to behave with PwDs and also an appropriate understanding of different communication barriers such as a PwD having cerebral palsy would require longer duration to explain his/her point due to speech disorder.
2. **Availability of Sign language interpreter** – all police stations must be equipped with a ready roster of sign language interpreter with their detailed address, their time of availability etc. The system must work out a payment pattern for the sign language interpreter who comes to the police station to help and method should be worked out so that the honorarium is dispensed within 7 days of the work to the sign language expert.

¹⁹ <http://www.who.int/mediacentre/factsheets/fs352/en/>, 2nd Jun. 2016

How to Improve Access for PwDs

Accessibility challenges will need to be addressed by appropriate planning, allocating resources and developing operational procedures. Some more suggestions are given below to improve access for PwDs;

1: Built-in Environment / Construction

- i) It is important to develop accessible pedestrian infrastructure such as streets, curb ramps and pavements adjacent to transit facilities.

2: Training of Government officials & staff

Training of government officials and staff would include following major topics;

2. Disability orientation
3. Orientation to barrier free environment
4. Training on appropriate methods of assistance to PwDs
5. Appropriate training for transit operators, conductors and facilities staff.

3: Implementation of Initiatives on Accessibility

In the Chapter, Social Justice, under the Section, 'Empowering Disabled People' the Eleventh Plan document states "a National Centre to facilitate and support the development of Universal Design and barrier-free built environment will be established". It also says, "A concerted effort would be made to make all public buildings and facilities such as schools, hospitals, public transport, and so on, compliant with the requirements of a barrier-free built environment. Towards this end, the building bye-laws, municipal and civic regulations, relevant codes for construction and design should incorporate the requirements of a barrier-free environment. Similarly, all shops/malls and similar places open to public, should be insisted upon to provide the facilities required for the disabled."

In addition to the above, implementation of the elements applicable to transport and other public facilities mentioned in the "Planning Barrier Free Environment" manual should also be ensured.

4. Adaption / adoption of Best Practices

The best practices mentioned in the section III of this document shall be adapted / adopted so as to provide improved access for PwDs and also ensure enhanced barrier free environment for PwDs.

5. Polices, Ordinance & Resources

- i) An ordinance to be passes for making all clinics, healthcare centres, pathological labs, etc. which are for the public, accessible to PwDs in a time bound manner
- ii) Repair policies must be developed and resources for maintenance need to be set aside from the beginning
- iii) Having Accessibility Standards that are adopted and are applicable to the entire nation is the first step for ensuring appropriate and uniform accessibility throughout

- iv) Model Building bye laws to be enforced
- v) Institutes like National Institute of Design (N.I.D.) to go out and look at these local situations, and train the students to look at the same and think of designs that make use of local resources and local technology

6. Sign Language Interpreters for assistance of persons with Hearing Impairment

Recruiting / deputing Sign Language interpreters at counters, along with the provision to ask for assistance at the station, platform, police station, govt. hospitals and other relevant places of public services.

7. Accessibility at Religious Places

The National Organization on Disability published a handbook on voluntary measures taken by religious organizations to improve access for PwDs. The handbook is entitled: *That All May Worship: An Interfaith Welcome To People With Disabilities*²⁰. This could be referred for standards for access to religious places for PwDs.

The office of the Commissioner for Disabilities has directed the Department of Religious and Charitable Endowments to implement Section 46 of the Act which provides for barrier-free access for the disabled to religious places in the State²¹.

The Hindu newspaper dated 9th Feb. 2004 mentioned the statement by the Assistant Commissioner for disability that "In keeping with the guidelines of the Act, if the temples have steps, ramps have to be constructed so that wheel chair users can enter the premises. Boards have to be put up directing disabled persons to special entrances or ramps. Special arrangements have to be made during pujas or offerings so that these persons do not have to stand in the queue to gain access. This was applicable also to mentally ill persons, who may get restless in queues,"²²

²⁰ <https://www.cqa.ct.gov/2006/rpt/2006-R-0756.htm> , 24/10/15

²¹ <http://www.thehindu.com/2004/02/09/stories/2004020901140501.htm>, 24/10/15

²² <http://www.thehindu.com/2004/02/09/stories/2004020901140501.htm>, 24/10/15

Section II

Department Specific Measures

Section II: Department Specific Measures

Accessibility is an on-going process. Technology, standards, and needs are constantly changing. Architectural accessibility codes of twenty years ago were a few pages long. Today, most codes are well over a hundred pages. Rather than look at this process as a static one, view it as an on-going process that is as much a part of your system building as staff development, budgeting and organizational development might be. As specified in the introductory section that all departments need to understand the basic principles and guidelines of accessibilities that need to be followed. However it is possible that several departments may have done some amount of accessibility compliance. Keeping this in view, it is advised that each department undertakes a self assessment access audit on the basis of the following checklist given below. The checklist consists of 4 priority areas along with their sub sections. Each of the questions has only 2 options i.e. “Yes” or “No”. the departments can also evaluate their level of compliance on the basis of the number of “No” that they have received. The checklist will serve as parameter for the departmental head regarding accessibility compliance that will help in budgeting as well as phasing out of work on this issue.

Existing Facilities Checklist²³

Sr. No.	Priorities	Yes / No
A	Accessible Entrance People with disabilities should be able to arrive on the site, approach the building, and enter the building as freely as everyone else. At least one path of travel should be safe and accessible for everyone, including people with disabilities	
I	Path of Travel	
1.	Is there a path of travel that does not require the use of stairs?	
2.	Is the path of travel stable, firm and slip-resistant?	
3.	Is the path at least 36 inches wide?	
4.	Can all objects protruding into the path be detected by a person with a visual disability using a cane? (Note: In order to be detected using a cane, an object must be within 27 inches of the ground. Objects hanging or mounted overhead must be higher than 80 inches to provide clear head room. It is not necessary to remove objects that protrude less than 4 inches from the wall.)	
5.	Do curbs on the pathway have curb cuts at drives, parking, and drop-offs?	
II	Ramps	
6.	Are the slopes of ramps no greater than 1:12? (Note: Slope is given as a ratio of the height to the length. 1:12 means for every 12 inches along the base of the ramp, the height increases one inch. For a 1.12 maximum slope, at least one foot of ramp length is needed for each inch of height.)	
7.	Do all ramps longer than 6 feet have railings on both sides?	
8.	Are railings sturdy, and between 34 and 38 inches high?	
9.	Is the width between railings at least 36 inches?	
10.	Are ramps non-slip?	
11.	Is there a 5-foot-long level landing at every 30-foot horizontal length of ramp, at the top and bottom of ramps and at switchbacks?	

²³ <https://www.doleta.gov/disability/htmldocs/efc.html>, 17/03/16

Sr. No.	Priorities	Yes / No
A	Accessible Entrance People with disabilities should be able to arrive on the site, approach the building, and enter the building as freely as everyone else. At least one path of travel should be safe and accessible for everyone, including people with disabilities	
III	Parking and Drop-Off Areas	
12.	Are an adequate number of accessible parking spaces available (8 feet wide for car plus 5-foot striped access aisle)?	
13.	Are the accessible spaces closest to the accessible entrance?	
14.	Are accessible spaces marked with the International Symbol of Accessibility?	
15.	Is there an enforcement procedure to ensure that accessible parking is used only by those who need it?	
IV	Entrance	
16.	If there are stairs at the main entrance, is there also a ramp or lift, or is there an alternative accessible entrance? (Do not use a service entrance as the accessible entrance unless there is no other option.)	
17.	Do all inaccessible entrances have signs indicating the location of the nearest accessible entrance?	
18.	Can the alternate accessible entrance be used independently?	
19.	Does the entrance door have at least 32 inches clear opening (for a double door, at least one 32-inch leaf)?	
20.	Is there at least 18 inches of clear wall space on the pull side of the door, next to the handle? (A person using a wheelchair needs this space to get close enough to open the door.)	
21.	Are doormats 1/2 inch high or less, and secured to the floor at all edges?	
22.	Is the door handle no higher than 48 inches and operable with a closed fist? (The "closed fist" test for handles and controls: Try opening the door or operating the control using only one hand, held in a fist. If you can do it, so can a person who has limited use of his or her hands.)	
23.	Can doors be opened without too much force (maximum is 5 lbf)? You can use a fish scale to measure the force required to open a door. Attach the hook of the scale to the doorknob or handle. Pull on the ring end of the scale until the door opens, and read off the amount of force required. If you do not have a fish scale, you will need to judge subjectively whether the door is easy enough to open...	
24.	If the door has a closer, does it take at least 3 seconds to close?	
V	Emergency Exit	
25.	Is there sufficient lighting for exit pathways such as stairs, corridors, and exit routes?	
B	Access to Goods and Services Ideally, the layout of the building should allow people with disabilities to obtain goods or services without special assistance. Where it is not possible to provide full accessibility, assistance or alternative services should be available upon request	
I	Horizontal Circulation	
1.	Does the accessible entrance provide direct access to the main floor, lobby, or elevator?	
2.	Are all public spaces on an accessible path of travel?	
3.	Is the accessible route to all public spaces at least 36 inches wide?	
4.	Is there a 5-foot circle or a T-shaped space for a person using a wheelchair to reverse direction?	

Sr. No.	Priorities	Yes / No
B	Access to Goods and Services Ideally, the layout of the building should allow people with disabilities to obtain goods or services without special assistance. Where it is not possible to provide full accessibility, assistance or alternative services should be available upon request	
II	Doors	
5.	Do doors in public spaces have at least a 32-inch clear opening?	
6.	On the pull side of doors, next to the handle, is there at least 18 inches of clear wall space so that a person using a wheelchair can get near to open the door?	
7.	Can doors be opened without too much force (5 lbf maximum)?	
8.	Are door handles 48 inches high or less and operable with a closed fist?	
9.	Are all thresholds level (less than 1/4 inch), or beveled, up to 1/2 inch high?	
III	Rooms and Spaces	
10.	Are all aisles and pathways to all goods and services at least 36 inches wide?	
11.	Is there a 5-foot circle or T-shaped space for turning a wheelchair completely?	
12.	Is carpeting low-pile, tightly woven, and securely attached along edges?	
13.	In routes through public areas, are all obstacles cane-detectable (located within 27 inches of the floor or protruding less than 4 inches from the wall), or are they higher than 80 inches?	
14.	Do signs designating permanent rooms and spaces, such as rest room signs, exit signs, and room numbers, comply with the appropriate requirements for accessible signage?	
IV	Controls	
15.	Are all controls that are available for use by the public (including electrical, mechanical, window, cabinet, game, and self-service controls) located at an accessible height? (Reach ranges: The maximum height for a side reach is 54 inches; for a forward reach, 48 inches. The minimum reachable height is 15 inches.)	
16.	Are they operable with a closed fist?	
V	Seats, Tables and Counters	
17.	Are the aisles between chairs or tables at least 36 inches wide?	
18.	Are the spaces for wheelchair seating distributed throughout?	
19.	Are the tops of tables or counters between 28 and 34 inches high?	
20.	Are knee spaces at accessible tables at least 27 inches high, 30 inches wide, and 19 inches deep?	
VI	Vertical Circulation	
21.	Are there ramps or elevators to all levels?	
22.	On each level, if there are stairs between the entrance and/or elevator and essential public areas, is there an accessible alternate route?	
VII	Stairs	
23.	Do treads have a non-slip surface?	
24.	Do stairs have continuous rails on both sides, with extensions beyond the top and bottom stairs?	
VIII	Elevators	
25.	Are there both visible and verbal or audible door opening/closing and floor indicators (one tone = up, two tones = down)?	
26.	Are the call buttons in the hallway no higher than 42 inches?	
27.	Do the controls outside and inside the cab have raised and braille lettering?	
28.	Is there a sign on the jamb at each floor identifying the floor in raised and braille letters?	
29.	Is the emergency intercom usable without voice communication?	
30.	Are there braille and raised-letter instructions for the communication system?	

Sr. No.	Priorities	Yes / No
B	Access to Goods and Services Ideally, the layout of the building should allow people with disabilities to obtain goods or services without special assistance. Where it is not possible to provide full accessibility, assistance or alternative services should be available upon request	
IX	Lifts	
31.	Can the lift be used without assistance? If not, is a call button provided?	
32.	Is there at least 30 by 48 inches of clear space for a person using a wheelchair to approach to reach the controls and use the lift?	
33.	Are controls between 15 and 48 inches high (up to 54 inches if a side approach is possible)?	
C	Usability of Rest Rooms when rest rooms are open to the public, they should be accessible to people with disabilities. Closing a rest room that is currently open to the public is not an allowable option.	
I	Getting to the Rest Rooms	
1.	If rest rooms are available to the public, is at least one rest room (either one for each sex, or unisex) fully accessible?	
2.	Are there signs at inaccessible rest rooms that give directions to accessible ones?	
II	Doorways and Passages	
3.	Is there tactile signage identifying rest rooms? (Mount signs on the wall, on the latch side of the door. Avoid using ambiguous symbols in place of text to identify rest rooms.)	
4.	Is the doorway at least 32 inches clear?	
5.	Are doors equipped with accessible handles (operable with a closed fist), 48 inches high or less?	
6.	Can doors be opened easily (5 lbf maximum force)?	
7.	Does the entry configuration provide adequate manoeuvring space for a person using a wheelchair? (A person using a wheelchair needs 36 inches of clear width for forward movement, and a 5-foot diameter clear space or a T-shaped space to make turns. A minimum distance of 48 inches, clear of the door swing, is needed between the two doors of an entry vestibule.)	
8.	Is there a 36-inch-wide path to all fixtures?	
9.	Is the stall door operable with a closed fist, inside and out?	
10.	Is there a wheelchair-accessible stall that has an area of at least 5 feet by 5 feet, clear of the door swing, OR is there a stall that is less accessible but that provides greater access than a typical stall (either 36 by 69 inches or 48 by 69 inches)?	
11.	In the accessible stall, are there grab bars behind and on the side wall nearest to the toilet?	
12.	Is the toilet seat 17 to 19 inches high?	
III	Lavatories	
13.	Does one lavatory have a 30-inch-wide by 48-inch-deep clear space in front? (A maximum of 19 inches of the required depth may be under the lavatory.)	
14.	Is the lavatory rim no higher than 34 inches?	
15.	Is there at least 29 inches from the floor to the bottom of the lavatory apron (excluding pipes)?	
16.	Can the faucet be operated with one closed fist?	
17.	Are soap and other dispensers and hand dryers 48 inches high or less and usable with one closed fist?	
18.	Is the mirror mounted with the bottom edge of the reflecting surface 40 inches high or lower?	

Sr. No.	Priorities	Yes / No
D	Additional Access When amenities such as public telephones and drinking fountains are provided to the general public, they should also be accessible to people with disabilities	
I	Drinking Fountains	
1.	Is there at least one fountain with clear floor space of at least 30 by 48 inches in front?	
2.	Is there one fountain with its spout no higher than 36 inches from the ground, and another with a standard height spout (or a single "high-low" fountain)?	
3.	Are controls mounted on the front or on the side near the front edge, and operable with one closed fist?	
4.	Does the fountain protrude no more than 4 inches into the circulation space?	
II	Telephones	
5.	If pay or public use phones are provided, is there clear floor space of at least 30 by 48 inches in front of at least one?	
6.	Is the highest operable part of the phone no higher than 48 inches (up to 54 inches if a side approach is possible)?	
7.	Does the phone protrude no more than 4 inches into the circulation space?	
8.	Does the phone have push-button controls?	
9.	Is the phone hearing aid compatible?	
10.	Is the phone adapted with volume control?	
11.	Is the phone with volume control identified with appropriate signage?	
12.	Is one of the phones equipped with a telecommunications device for the Deaf? telephone (TT/TTY/TDD)?	
13.	Is the location of the TDD identified by accessible signage bearing the International TDD Symbol?	

Section III

Best Practices

Section III: Best Practices

1. Resource Room for children in high support group

In order to reach out to the Children in high support group, especially in the remotest regions of India, is by optimally utilising available resources and infrastructure through the Sarva Shiksha Abhiyan (SSA), the government's education-for-all programme. SSA's framework for education is an inclusive one, and contains provisions for educating CWSN. Following activities could be taken up;

- i) Active screening and early identification
- ii) Sensitise and train primary school teachers
- iii) Set up Resource Rooms for children in high support group for enhancing their sensory activities along with their sensory motor coordination through specialized stimulation therapy

2. Refreshable Braille Display Unit

The Helen Keller Institute for Deaf & DeafBlind (HKIDDB), Mumbai has mainstreamed deafblind children by enabling them to access computer training. The “Refreshable Braille Display Unit” is a piece of hardware attached to the Central Processing Unit of a computer via USB cable which gives the output in Braille (six or eight dots). Its function is like a monitor which gives the output in visual graphics. The Braille Display Unit gives the output in Braille dots and refreshes the Braille dots for each line that is changed. Deafblind students who want to acquire such access to computers must first develop their skills in Braille, typewriting and Advanced Language²⁴.

3. Accessible tourist places

The famous Buddhist site Sanchi has opened itself to people with visual impairment in Nov. 2011. It now has the distinction of being the first world heritage monument in the country that is friendly to persons with visual impairment. Archaeological Survey of India (A.S.I.) has installed special tactile walkways, signages in Braille, beepers and a Braille map to enable people with visual impairment to feel the grandeur of the monument. As a rule they do not allow visitors and tourists to touch the monument, but they have relaxed this rule for persons with visual impairment to enhance their experience of the famed monument²⁵.

4. Sidewalk

Refer the Transport and Road Planning chapter of “Planning Barrier Free Environment” manual

5. Curb Ramp at Walkway and Pedestrian Crossing

Refer the Transport and Road Planning chapter of “Planning Barrier Free Environment” manual

6. Accessible buses

Refer the Transport and Road Planning chapter of “Planning Barrier Free Environment” manual

²⁴ <http://indiatogether.org/deafblind-health>, 26/10/15

²⁵ http://www.dnis.org/news.php?issue_id=9&volume_id=8&news_id=1184&i=7, 20/10/15

7. Alighting Buzzers

Refer the Transport and Road Planning chapter of “Planning Barrier Free Environment” manual

8. Information Signs

Information on the names of all stops along a bus route should be indicated inside the bus by displaying the text in a suitable position; and information on a route and its final destination should be displayed outside the bus in large text, especially on the front and side of the bus. This information should be in a bright contrasting colour and be well illuminated by an external light to make it readable in the dark.

9. Knurled Surface

Roughened area, often in a crisscross pattern; used on either doorknobs or grab bars. On doorknobs It is used to provide tactile clues to visually impaired persons to indicate that passage leads to an area of danger. On grab bars it is used to improve grasp and to prevent slipping.

10. Assistive devices from local material

The real innovation which will come out of India would be about using local material found in abundance and using it to produce assistive tools which can be made relatively cheap. This is the only kind of stuff that could work on a mass scale. There is no dearth of expensive assistive technological products, the problem is the market for it will be quite low as most disabled people in India are simply not affluent enough to afford it²⁶.

11. Accessibility to Digital Communication

Basics of accessibility²⁷

The term accessibility means enabling people with the widest possible range of human capabilities to operate and use terminals and services. Accessibility is improved by supporting as many different media streams as possible and considering the widest range of physical characteristics in capturing, transporting and presenting the media streams. There is a classic structure for designing features of accessibility;

1. Design the mainstream feature for the widest possible range of capabilities of the user as feasible
2. Make sure the feature is adaptable by settings to permit an even wider range of capabilities
3. Arrange for standardized interfaces for the connection of a wide range of user interface devices in order to meet user requirements that cannot be met with the built-in-features.

Elements and use of the checklist²⁸

The following list gives a basic structure to address various aspects of accessibility. Good accessibility requires that most of these aspects are open for more than one method of user interaction.

The primary intent of the checklist is to provide a structured set of reminders for standards writers during the process of creating standards in the ICT area. Whenever a standardization work item is created or its

²⁶ <http://shwetankdixit.com/blog/reach-accessibility-in-india-and-the-challenges-we-still-face/>, 24/10/15

²⁷ <http://www.itu.int/ITU-T/studygroups/com16/accessibility/docs/accessibility-checklist.pdf>, 23/10/15

²⁸ <http://www.itu.int/ITU-T/studygroups/com16/accessibility/docs/accessibility-checklist.pdf>, 23/10/15

documents and progress evaluated, the checklist should be consulted. Care should be taken that all relevant sections have been considered.

For many points in the checklist, an example is provided. The checklist item is not limited to the examples.

The checklist is structured in the following topics

1. Control of devices through a user interface
2. Control of services
3. Media transport
4. Media entry by the user
5. Media presentation to the user
6. Invocation of media translating services
7. User profile management
8. User profile usage

1. Control of devices through a user interface

1. A device should be controllable through as many alternative forms of user interface interaction as possible. Similarly, the user interface feedback should be configurable to utilize as many forms of feedback as possible. *Example: Dialling should be possible using voice commands, punching in numbers, short-dials, selection from phone-book etc. Ringing should be indicated using audible, tactile, and/or visual means. The forms of control and feedback should be designed such that both physical and mental disabilities can be coped with.*
2. External and, possibly, internal interfaces should be available that can handle device control, service control and media capture/rendering. *Example: A portable device should be able to utilize keyboards with extra large keys. Audio capable devices should be able to connect to specialized equipment for hard-of-hearing users.*
3. Different forms of accessibility needs of people with disabilities can best be handled by using different forms of media. As a general rule, multimedia-capable devices provide better accessibility than single-media devices.
4. A multimedia capable device should be configurable to meet accessibility requirements not fulfilled in the default setting. *Example: A videophone should be able to use the bit rate normally allocated for audio for the video channel, so as to increase the video quality.*
5. In a text capable device, the text display characteristics should be adjustable to the needs of the user.
6. Include alternative ways to receive feedback from the control actions, using various modes and properties of presentation.

2. Control of services

1. Include alternative ways to control the services, using various modes and types of control action.
2. Provide for interoperability with similar services in other networks, when feasible. If not feasible, provide a reason why.
3. Include alternative ways to receive feedback from the control actions of the services, using various modes and properties of presentation.

3. Media transport

Include methods and coordination for transport of alternative media (e.g. audio, video and text), so that transport of accessible content can be achieved

1. Ensure transport media properties are suitable for the perception of the receiving user, i.e.:
2. Video transport properties should allow presentation of video with good quality for sign language and lip reading
3. Audio transport properties should make it possible to present audio for clear spoken language perception, and good synchronisation with video for lip reading
4. Text transport properties should make it possible to present text with good timing characteristics so that users do not experience excessive delay. It should be possible for the user to select the characteristics of the text display
5. Information transport should make it possible to present information with characteristics selectable by the receiver.

4. Media entry by the user

1. Describe methods for entry of alternative media (e.g. audio, video, and text), so that entry of accessible content can be achieved.
2. Ensure the properties of media entry are suitable for accessible perception by a receiving user, i.e:
 - a) Video entry properties should be selected so that it is possible to present video with good quality for sign language and lip reading.
 - b) Audio entry properties should be selected so that it is possible to present audio for clear spoken language perception, and good synchronisation with video for lip reading.
 - c) Text entry properties should make it possible to present text with good timing characteristics so that users do not experience excessive delay. It should be possible for the user to select the characteristics of the text display.
 - d) Information entry should be described so that it is possible to present information with characteristics selectable by the receiver.

5. Media presentation to the user

1. Describe methods for presentation of alternative media (e.g., audio, video and text), so that presentation of accessible content can be achieved.
2. Ensure the properties of the media presentation are suitable for accessible perception by the user, i.e:
 - a) Video presentation properties should be selected so that it is possible to present video with good quality for sign language and lip reading.
 - b) Audio presentation properties should be selected so that it makes it possible to present audio for clear spoken language perception, and good synchronisation with video for lip reading.
 - c) Text presentation properties should make it possible to present text with good timing characteristics so that users do not experience excessive delay. It should be possible for the user to select the characteristics of the text display
 - d) Information presentation should be described so that it makes it possible to present information with characteristics selectable by the receiver

6. Invocation of media translating services

Media translation may be an important means of providing accessibility. Manned services are usually called relay services.

1. Include descriptions of the methods of invocation of the services for translating media to make them accessible for people with disabilities.
2. The invocation of translating services should enable convenient invocation of such services in a manner that resembles the plain user-to-user session setup.

7. User and device profile management

Include features of importance for accessibility in the management of profiles, and make the characteristics variable enough to provide good accessibility. *Example: user devices and user-accessible services should offer profiles for the common capability and preference variations, so that disabled people can select an appropriate profile without manually configuring many options. The profiles should themselves be configurable, and/or user-defined profiles should be available, so that professional help can pre-configure devices and/or services accordingly. It should be possible to invoke Service profiles manually or automatically, e.g. through means such as caller-ID.*

8. User and device profile usage

Include features of importance for accessibility in the use of profiles, and make the characteristics variable enough to provide good accessibility.

9. Records from the use of the accessibility checklist

When a Recommendation or work item is checked against this checklist, records should be made about the outcome. Any resulting request from the use of the checklist to expand or include an item should be recorded together with the planned remedial action. The records should follow the standardization item through the standardization process. If the outcome is that a topic is handled in a parallel standardization activity, the records should include an identification of that activity. If it turns out to be impossible to include accessibility features in a Recommendation, the records should indicate the reason and there should be an agreement to the course of action by the controlling Study Group.

12. Electronic Audible Traffic Signals

Introduction

The function of audible traffic signals (ATS) is to provide indication to the visually impaired persons (VIPs) on the prevailing pedestrian signals states at the crossings. In late 2004, Transport Department (TD) completed the territorial-wide installation of the new electronic audible traffic signals (eATS). The new eATS is capable of responding automatically to the ambient noise level, i.e. its output will be higher under noisy environment and will reduce automatically if the environment is quiet. In addition, the eATS is equipped with a tactile unit which indicates the prevailing pedestrian signal states by means of different vibrating patterns. With these features, the eATS is capable of providing 24-hour services to the VIPs while minimizing the noise nuisance to the nearby residents.

Components of eATS

The eATS consists of the following 3 different components:-

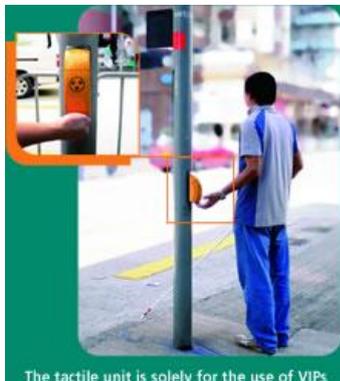
- Audible unit; and

- Tactile unit or
- Tactile unit with pushbutton function

Audible Unit

- Mounted under pedestrian signal lights
- Emits audible signal to indicate the prevailing pedestrian signal states

Tactile Unit



- A yellow box mounted at elbow level of the pedestrian signal pole
- A vibrating unit located at the bottom of the unit
- Different vibrating pattern to indicate prevailing states of pedestrian signal
- Directional arrow to indicate the direction of the pedestrian crossing
- The tactile unit is solely for the use of VIPs

Tactile unit with pushbutton function

- In addition to the functions of tactile unit, it provides pedestrian pushbutton function
- When touched by hands on its surface, pedestrian crossing demand will be sent to the traffic signal controller nearby. At the same time, visual and audible acknowledgement signals will be displayed and emitted by the unit
- The traffic signal controller will render the green signal to the pedestrian as soon as possible knowing that someone is waiting to cross the road
- The pushbutton function is for the use of pedestrians, not solely for VIPs

13. Accessible Houses

Lack of Accessible Housing is a major concern for people with disabilities. Generally, the designs of the houses do not meet the needs of persons with disability. It is almost impossible to get a house, which is accessible, particularly for a wheelchair user. The principle of Universal Design for constructing houses would go a long way in making them comfortable for all. Accessible houses are not just useful for disabled people but also for non-disabled people who may experience temporary disability due to injury, etc. or may have elderly people in their families who need accessible facilities or to host a friend with disability. The houses should be constructed keeping long term in view. The Indira Awas Yojana (IAY) has provision for 3% reservation of housing for PwDs in the villages. However, the concept of universal design or accessible design has not been sufficiently popularized by the implementing authorities. For a poor villager, who is completely ignorant about the provisions of accessibility feels grateful atleast a house has been provided to them on priority and has no

capacity to say regarding providing accessibility in house. This should be taken care appropriately by educating the PRI system from district, block to Gram Panchayat.

14. Blowing whistle to lead the blind

One initiative that was planned in Bangalore for making roads safe for visually impaired people was to give them whistles, which they can blow to stop the vehicles while crossing! The Indian Disability League (IDL), which helps the blind persons rediscover their natural skills for music, have come out with the idea of handing over a whistle along with the white cane, which the blind can use when confronted with a dangerous situation. To have a whistle and blow it in such situation will help them attract attention of people walking by. A cop who may be standing nearby would also find it easier to come to their rescue.²⁹

15. Educatile

Educatile is a cross-platform Java-based software which facilitates the creation of tactile graphics specialized for scientific and mathematical content. It automatically handles layout and formatting thus relieving special educators and enabling them to concentrate on the content of the diagrams³⁰.

16. Smart Cane

The 'smart' cane is an affordable obstacle detection system that is mounted on the white cane carried by the visually challenged. The system detects obstacles above knee height, within a range of 3 meters and conveys distance information through varying vibratory patterns³¹.

17. OnBoard

Bus Identification and homing system - Visually impaired persons depend heavily on public buses for commuting. However, at a bus stop the person hears buses approaching but cannot identify the route number. Our system allows the user to identify the route number of buses approaching a bus stop. Further, the system allows the user to select the bus of interest and navigate towards the entry by triggering auditory cues from the bus. Funded by Department of Science & Technology (DST)³².

18. INALSI - Indoor Navigation with Access to Location Specific Information

Roshni system allows the user to enter places of interest and then guides the user towards the destination via audio directions from a cell phone. Position is estimated via IR sensors embedded in the environment and fused with intrinsic motion estimates. User interaction is via a mobile application and text-to-speech engine. A test system is installed in an institute building and ongoing user evaluation. Efforts underway for deployment in several buildings for longer term use. Funded By Samsung INDIA ELECTRONICS PVT. LTD³³.

²⁹ <http://assistech.iitd.ernet.in/research.php#tg> , 19/10/15

³⁰ <http://assistech.iitd.ernet.in/research.php#tg> , 19/10/15

³¹ <http://assistech.iitd.ernet.in/research.php#tg> , 19/10/15

³² <http://assistech.iitd.ernet.in/research.php#tg> , 19/10/15

³³ <http://assistech.iitd.ernet.in/research.php#tg> , 19/10/15

19. Screen Readers - NVDA Screen Reading Software

Screen Reading Software interpret information displayed on a screen, converting to audio via text-to-speech engines. The group is engaged in development on an open source screen reading software called NVDA. The immediate objective is to provide full compatibility with MS office and key application software packages for promotion of employment opportunities. The long term objective is to support Indian Languages³⁴.

20. Visitability

One interesting concept that is coming up in the U.S. is **visitability**. Visitability is seen as an ordinance, which means neighbourhoods will act in this regard. While people with disabilities living in their homes are accessible, they in turn cannot go to somebody else's house and are left behind in social interactions. So the ordinance is to adopt the idea that all homes will have all accessible means - no threshold, no steps, and at least one accessible bathroom downstairs.

21. Accessibility to legal Aid

The Alternative Law Forum in Mumbai and Bangalore offers free legal aid to PwD through the Office. This not only includes issues with respect to PwD Act entitlements, but broader issues of access of justice for PwDs.

³⁴ <http://assistech.iitd.ernet.in/research.php#tg> , 19/10/15

Section IV

Resources Inventory

Section IV: Resources Inventory

Annexure I: Concession Certificate

Paste Passport size Photograph duly signed & stamped by the issuing Doctor.

Appendix 1/36

CONCESSION CERTIFICATE

Form for the purpose of grant of rail concession to orthopaedically Handicapped / Paraplegic persons / patients to be used by the Government Doctor

This is to certify that Km./Shri/Smt..... Whose Particulars are furnished below, is a bonafide "Orthopaedically /Handicapped / Paraplegic person / patient and CANNOT TRAVEL WITHOUT THE ASSISTANCE OF AN ESCORT.

Particulars of the Orthopaedically Handicapped / paraplegic person / patient:

- (a) Address :
(b) Father's / Husband's Name :
(c) Age:..... (d) Sex:.....
(e) Nature of Handicap: (To be written by doctor whether the disability is Temporary or Permanent)
(f) Causes of loss of Functional capacity :
(g) Signature or Thumb impression of Orthopaedically handicapped / paraplegic person / patient : (not necessary for those whose both hands are missing..... or non-functional).

.....
(Signature of Government Doctor)

Place

Date

.....
Clear seal of Government Hospital/Clinic

.....
Seal containing full name and Regd.No. Of the Doctor

* Strike out where not applicable.

Note : -

- (1) This certificate should be issued only to those Orthopaedically Handicapped / paraplegic persons / patients WHO CANNOT TRAVEL WITHOUT THE ASSISTANCE OF AN ESCORT. The photo must be signed and stamped in such a way that Doctor's signature and stamp appears partly on the certificate.
(2) In the case of temporary disability, the certificate will be valid for five years from the date of issue. In the case of permanent disability, the certificate will remain valid for (1) five years, in case of persons upto the age of 25 years, in case of persons in the age group of 26 to 35 years and (3) in the case of persons above the age of 35 years, the certificate will remain valid for whole life of the concerned person. After expiry of the period of the validity of the certificate, the person is required to obtain a fresh certificate is accepted for the purpose of grant on concession. The original certificate will have to be produced for instruction at the time of purchase of concessional ticket and during the journey, if demanded
(3) No alteration in the form is permitted.

Annexure II: International Accessibility Checklist

Accessibility Checklist

-Modified from Alderson-

INSTRUCTIONS FOR ACCESSIBILITY CHECKLIST:

1. YOU MAY WANT TO PRINT THIS INSTRUMENT FOR YOUR PROJECT.
2. PLEASE CHECK "YES" OR "NO" AT THE END OF EACH QUESTION. IF ANY SPECIFIC QUESTION IS NOT APPLICABLE, JUST PUT "N/A."

1. Are parking spaces available for people with disabilities? Yes ____ No ____
2. Are the parking spaces near to the building entrance? (Travel distance should not exceed 200 feet.) Yes ____ No ____
3. Are the parking spaces easily accessible to the front entrance by level or ramped path at least four feet wide and free of obstructions? Yes ____ No ____
4. Is the surface of the parking lot area smooth (but not slippery) and hard (not sand, gravel, etc.)? Yes ____ No ____
5. Are walks leading to the facility level or nearly so? Yes ____ No ____
6. Are there curb-cuts at crossways? Yes ____ No ____
7. Is at least one primary entrance usable to individuals who use wheelchairs? Yes ____ No ____
8. Do all doorways have a clear opening of at least 32 inches? Yes ____ No ____
9. Are the doors operated by a single effort and is the pressure of the door light enough for the person with disability to open? Yes ____ No ____
10. Are sharp inclines or abrupt changes in level avoided at thresholds? Yes ____ No ____
11. Are ramps provided where there are stairs? Yes ____ No ____
12. Do the ramps conform to the standard of no greater than one-inch rise in 12 inches of length? Yes ____ No ____
13. Do the ramps have a surface that is firm, fixed and nonslip, with a 32-inch handrail on at least one side? Yes ____ No ____

14. Are guest elevators accessible and usable by persons with physical disabilities? Yes ____
No ____
15. Are all elevator controls 48 inches or less from the floor? Yes ____ No ____
16. Are tactile identifications located beside all elevator operating buttons? Yes ____ No ____
17. Do all bathroom doors provide a minimum of 32 inches of clear opening? Yes ____ No ____
18. Is the bathroom floor the same level as the floor outside of the bathroom? Yes ____ No ____
19. Does the bathroom contain a floor clearance area of at least 5 feet by 5 feet to permit a person who uses a wheelchair sufficient turning space? Yes ____ No ____
20. Is there at least one bathroom stall usable by a person who uses a wheelchair? Yes ____ No ____
21. Are sinks, mirrors, dispensers and disposal units within reach and usable by a person who uses a wheelchair? Yes ____ No ____
22. Are there conveniently located public phones 48 inches or less from the floor? Yes ____
No ____
23. Do public telephones have volume control devices? Yes ____ No ____
24. Are Text Telephones (TT's) available? Yes ____ No ____
25. Are water fountains available and have a clearance of 28 inches? Yes ____ No ____
26. Are any of the guestrooms designed especially for persons who use wheelchairs? Yes ____
No ____
27. Do all doorways have a clear opening of 32 inches? Yes ____ No ____
28. Are there handrails in the toilet and shower area? Yes ____ No ____
29. Is there sufficient turning space and maneuvering in the bath for a wheelchair? Yes ____
No ____
30. Are hanging rods for clothing located within 48 inches of the floor? Yes ____ No ____
31. Are all booths and tables (conference, social and dining) able to be converted to wheelchair use, with a clearance of 28 inches from the floor? Yes ____ No ____

- 32. Is the meeting space accessible and usable by persons with disabilities? Yes ____ No ____
- 33. Will a person who uses a wheelchair be able to exit and return to the conference area with minimum effort? Yes ____ No ____
- 34. Are all common areas accessible to all people? Yes ____ No ____
- 35. Is help available for those who might need any type of assistance? Yes ____ No ____
- 36. Who can be called if assistance is needed?:
- 37. What is the general attitude of all personnel towards persons with disabilities?

Annexure III: Accessibility for Meetings, Seminars, Conferences and Workshops

Planning conferences that are accessible to people with disabilities involves focusing on the accessibility of all aspects of your meeting, from choosing a site through promotion, registration, presentations, and handouts. The Persons with Disabilities Act of 1995 (PwD Act 1995) provides to individuals with disabilities the same civil rights protections that apply to race, sex, national origin, and religion. Consequently, any meetings that are open to the public must comply with the provisions of the Act. Furthermore, if the conference site is a public facility such as a hotel, it must also comply with the PwD Act.

Chapter VIII of the PwD Act stipulates that public facilities must make reasonable modifications to avoid discrimination in their policies, practices and procedures. It requires private establishments that are used by the general public to be accessible to people with disabilities who are customers, visitors, employees, or clients. Examples of modifying a site to make it accessible to a person in a wheelchair include making doors wide enough and assuring that the main entry and exit routes of the facility are easily maneuverable and obstacle free. Other easily achievable alterations include providing ramps to elevated areas, providing accessible signage through height modification and through raised lettering or Braille, and providing professional, qualified sign language interpreters.

Choosing an Accessible Site

When choosing a site for a meeting or conference, the meeting planner or a local representative will need to visit the hotel or conference center to determine whether or not any barriers to accessibility exist. The site visit must include checking entrance and interior doorways, parking lots, corridors and aisles, stairways, elevators, sleeping rooms (if needed), meeting rooms, restrooms, dining facilities, telephones, water fountains, temperature controls, light and emergency controls, and the fitness center or health club. In addition, the accessibility of any outside entertainment and transportation services offered to participants must be checked. For all participants, the time necessary to move from one session to another must be considered and allowed for in the agenda. For example, do participants have to change floors to get to lunch or to the next session? Are the distance and route between meeting rooms traversable for all? Many of the publications included in the bibliography, such as *Accommodating All Guests*:

The staff of the hotel or conference center must be educated about issues of accessibility. The conference planner should provide the site staff with as much information as possible about individuals with disabilities.

The goal of the conference planner is to select a conference setting that allows a person with a disability to move about the conference site freely and independently and participate in and benefit from the conference program. To achieve this goal, the following points should be considered during the site visit.

Site Accessibility Considerations for Individuals with Mobility Impairments

The following accommodations should be provided for individuals with mobility impairments, including those using wheelchairs, crutches, canes, or walkers:

- Accessibility of main entrances to the site.
- Doorways wide enough to accommodate wheelchairs and three-wheel carts of varying sizes.
- Capability of the site to provide appropriately graded ramping in inaccessible areas (including meeting rooms, dining, and lounge areas).

- Wide spaces, corridors, and aisles.
- Level surfaces.
- Accessible restrooms (including wide doors, unobstructed sinks of appropriate height, large stalls, grab bars, adequate space in which to manoeuvre a wheelchair, and controls and equipment easily operated from a sitting position).
- Public telephones at accessible height.
- Adequate space for wheelchairs in meeting rooms, at conference and banquet tables with all the participants, not on the outskirts.
- Wheelchair accessible registration table.
- Accessible electrical outlets and closet rods of appropriate height in guest rooms.

Site Accessibility Considerations for Individuals with Visual Impairments

The following accommodations should be provided for individuals who are partially sighted or blind:

- Well-lit areas, adjustable lighting.
- Obstacle-free environment (i.e., free of protruding objects that cannot be detected easily).
- Large, tactile directions for equipment, elevators, and restrooms; elevator numbers written in Braille or raised print.
- Dog runs in the hotel or convention center (or an area near the outside entrance) for dog guide users.
- Appropriate accommodations in guest rooms.

Site Accessibility Considerations for Individuals with Hearing Impairments

The following accommodations should be provided for individuals who are hard of hearing or who are deaf:

- Guest rooms equipped with alternative emergency devices such as visual alarms and indicators, (e.g., flashing lights on doors, telephones, and as fire alarms), vibrating beds, volume-controlled phone lines, and close-captioned television.
- An available TDD (telecommunication device for the deaf).
- Dog runs in the hotel or convention center (or an area near the outside entrance) for hearing-dog users.

Promotion and Registration

Conference planners should arrange for all promotional material to be available in alternative formats, such as Braille or computer disk. Include photographs of individuals with disabilities in the promotional material; this illustrates a commitment to assuring all participants an accessible conference.

In all conference material, make participants aware that accommodations can be made for a variety of needs. The registration form must ask whether any special assistance is needed. Examples include statements such as the following:

- If you have a disability and require special assistance, please inform (conference planner) by attaching your requirements to this form or call (conference planner.)
- If you have a disability and may require accommodation in order to fully participate in this activity, please check here. You will be contacted by someone from our staff to discuss your specific needs.

A more detailed registration form requesting information on specific disabilities and needs can also be used. If a more general statement such as the one above is included, staff responding to special assistance requests should be prepared to ask detailed questions regarding necessary accommodations.

Designate someone on staff to handle all issues concerning accommodations for participants with disabilities during the meeting. Have this person available to assist in room registration and site orientation.

Social Functions and Meals

When planning social functions and meals, meeting planners should:

- Include personal assistants and interpreters in the estimated number of participants.
- Make adequate provisions for seating, allowing all participants to sit in the same area. Do not place persons in wheelchairs, or those who use walkers or dog guides on the fringes of the dining area.
- Avoid buffet lines; they can be particularly difficult for persons with mobility or visual impairments.

Conference Presentations

The meeting planner must work with invited speakers and presenters to ensure presentations that are accessible to persons with disabilities. Attention to the following points will enhance the accessibility of conference presentations.

Accessible Presentations for all Participants with Disabilities

- Choose well-lit and easily accessible meeting rooms.
- Control background noise to the greatest extent possible.
- Choose a meeting room with good acoustics and an auxiliary sound system, if possible.
- Provide written materials (handouts, overheads, etc.) disseminated at the meeting in a variety of formats, such as raised print, large print, Braille, audio cassette, and computer disks.
- Discuss with each presenter, prior to the meeting, the importance of developing a presentation that will be accessible to all participants.
- Instruct the presenter(s) to include only the key points of the presentation on overheads or slides. Be sure they are completely legible, with large print and sharp, contrasting colors. In addition, ask the presenter(s) to limit the number of overheads or other visual aids used in the presentation and to allow adequate time for the audience to read the visual aids.
- Ask the speaker(s) to accompany conference materials, including presentations and handouts, with a complete verbal description. If slides, overheads, videos, or other visual aids are used, the speaker must describe them orally. Ask presenter(s) to provide a copy of presentation materials well in advance to allow for large print or Braille transcription.
- Instruct the presenter(s) to speak in well-paced and well-modulated tones. It is particularly important for presenters to monitor their rate of speech and not speak too rapidly. At the beginning of the presentation, tell participants with disabilities that notes will be available in appropriate formats.
- Check for the special needs of presenters with disabilities. Special needs may include ramping or podium requests, a reverse interpreter, an orientation and mobility specialist, or guide for a person with limited vision.

The following issues are particularly relevant to the accessibility of presentations for persons with visual impairments or those who are deaf or hard of hearing.

Accessible Presentations for Individuals with Visual Impairments*

- Meet with participants who have visual impairments and show them the site by explaining the layout, identifying the location of amenities and exits, and walking through the meeting area with them. Help them to find seating in the meeting room.
- Provide oral descriptions of meeting room layouts, emergency exit locations, and amenities prior to the beginning of the presentation,
- Allow access to front row seats during meeting sessions.
- (Note. The items listed in this section may also increase the accessibility for sighted individuals with reading or learning disabilities.)
- Have a staff member or volunteer available to sit with the participant and describe the presentations, if the participant so desires.
- Offer papers, agendas, or other materials in alternative formats. Options include large print, Braille, tape recordings, and computer disks in ASCII format. Print materials can be transcribed in Braille through contracting with outside agencies or by purchasing the necessary computer hardware and software programs. If the session is to be taped, the master tape must be made on good quality tape. A verbal listing of contents should be included at the front of each tape. One other option is to have reader(s) available for participant(s) with visual disabilities.
- Have photocopies of transparencies or slides available at the registration area for close examination; some audiovisual materials may not be amenable to verbal description.
- Design all exhibits so that they may be touched and/or heard. Always provide an alternative to solely visual exhibits.
- Check for adjustable lighting in the meeting room; this is particularly important for the individual with low vision. Lowering the ceiling lights can increase the contrast--and thus the visibility--of audiovisual materials. However, moving from a brightly lit vestibule to a darkened room can cause temporary disorientation. Ask the participant whether a sighted guide would be helpful.
- Use sharply contrasting colors and large print for materials, maps, books, signs, menus, forms, and displays. All materials should be available in large or raised print or in Braille.
- Caution presenter(s) against relying solely on oral presentations and gestures to illustrate a point, or using visual points of reference (e.g., "here" or "there.")

Accessible Presentations for Individuals who are Deaf or Hard of Hearing

- Allow for preferred seating, usually in front of the speaker and interpreter. (Preferred seating should also be away from heating and air conditioning units, hallways, and other "noisy" areas.)
- Keep lights bright in the area where the presenter and interpreter stand.
- Check that window coverings are adjustable to reduce or remove glare.
- Arrange seats in a circle for smaller discussion groups.
- Provide copies of material presented orally in written form or on diskette. Work with the presenter(s) prior to the meeting to allow for these accommodations.

- Have notes on the presentation available beforehand, if at all possible. Alternatively, have a staff member or volunteer available to take notes during the presentation, allowing the participant to focus on the speaker and interpreter.
- Arrange for qualified, professional interpreters, trained in the preferred communication style, for example, American Sign Language, Signed English, or Cued-Speech. Use a local or national agency or organization to obtain interpreters.
- Investigate the possibility of real-time captioning for large group meetings.
- Arrange for an adequate number of interpreters for meetings, meals, and social events. At least two interpreters must be available for any meeting longer than two hours. Have an additional interpreter available for registration.

Accommodating Participants with Differing Disabilities

In the event that there are conference participants with both visual and hearing impairments, accommodations necessary for one person may conflict with the needs of another. For example, presenters using overheads usually request that the lights be dimmed in the room, making it difficult for a person who is hard of hearing to see the interpreter in the dim light. However, if the lights are raised, individuals with visual impairments may have difficulty seeing the overheads because the contrast is decreased by the bright lighting. Therefore, it is particularly important to consult with persons with visual impairments and those who are deaf or hard of hearing before visual aids are used or the lighting level in the room is brightened or dimmed.

The meeting planner is responsible for accommodating each individual to the maximum extent possible. One of the suggestions could be dimming the overhead lights and putting a spotlight on the interpreter, thereby maintaining enough contrast for the person with limited vision while still providing light on the interpreter. Before the meeting, the planner should confirm with the hotel that spotlights are available.

As previously mentioned, the conference planner should be prepared to orient and sensitize the staff at the conference site to the needs of all participants with disabilities. Several meetings and preconference site visits may be necessary; however, with continued communication and education, the goal of accessible, barrier-free conferences and meetings for all individuals will be achieved.

Annexure IV: Accessibility checklist for Communication

Does your organization have clear **policies, procedures** and **practices** to ensure that people with communication disabilities can:

Use their preferred method of communicating when receiving your goods and services?

Have their personal communication requirements accommodated in personal meetings, over the telephone and via written communications?

Have access to sign language interpreters, captioners, note-takers, intervenors and communication assistants to be accessed upon request?

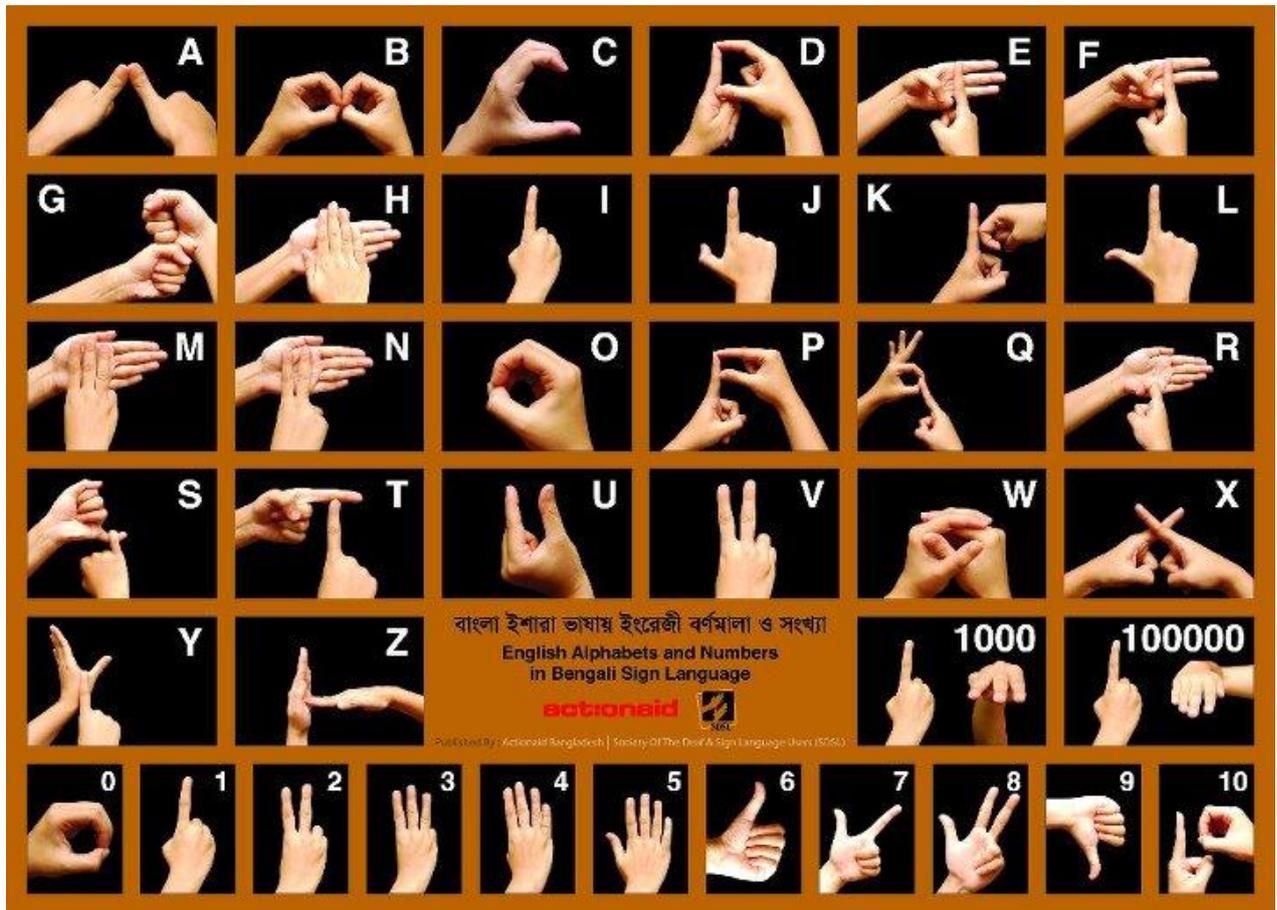
Give feedback on how well their communication needs are accommodated within your organization?

Has your organization provided the following **training** and **resources** to all staff who interact with the public:

General guidelines for communicating and working with people who have a range of communication disabilities?

Information on how to access community resources for sign language interpreters, captioners, note-takers, intervenors, communication assistants?

Annexure V: Sign Language



Annexure VI: Slip Resistant Floor Surfacing

Slip resistant surfacing			
Material	Dry and unpolished	Wet	Remarks
Clay Tiles (Carborundum finish)	Very Good	Very Good	May be suitable for external stairs
Carpet	Very Good	Good	
Clay Tiles (Textured)	Very Good	Good	May be suitable for external stairs
Cork Tiles	Very Good		
PVC with non-slip granules	Very Good	Good	
PVC	Very Good	Poor to fair	Slip-resistance when wet may be improved if PVC is textured. Edges of sheet liable to cause tripping if not fixed firmly to base.
Rubber (sheets or tiles)	Very good	Very poor	Not suitable near entrance doors.
Mastic asphalt	Good	Good	
Vinyl Asbestos tiles	Good	Fair	
Linoleum	Good	Poor to Fair	Edges of Sheets may cause tripping if not securely fixed to base
Concrete	Good	Poor to fair	If a textured finish or a non-slip aggregate is used, slip resistance value when wet, may be increased to good.
Granolithic	Good	Poor to fair	Slip-resistance when wet may be improved to good, by incorporating carborundum finish.
Cast Iron	Good	Poor to fair	Slip-resistance may be acceptable when wet if open treads used.
Clay Tiles	Good	Poor to fair	Slip-resistance when wet and polished very poor
Terrazzo	Good	Poor to fair	Non-Slip nosing necessary on stairs. Slip-resistance when polished or if polish is transferred by shoes from adjacent surface very poor.

Annexure VII: Conducting Access Audit

Access audits are surveys conducted of already built environment that needs to be made accessible. The access audit team should preferably consist of the following:

- People with disabilities who understand access needs
- Architect or a civil engineer, ideally of the building being audited.

Before going for the access audit make sure you have the following things:

- The audit Checklist
- Measuring tape
- A writing pad and a pen
- A camera
- A hat or dark glasses especially if you are surveying external environment

Once you have reached the building to be surveyed follow the checklist and keep checking the accessibility, beginning from the parking to the main entrance and through all the sections of the building.

It is important to keep measuring the heights and widths of all areas you pass through like the height of the stairs, width of the doors, size of the toilet, height of the counters etc.

Keep discussing the changes you recommend for specific barriers with the architect or the civil engineer. Also whatever recommendations are thought of keep jotting them down on the writing pad along with the existing measurements.

While surveying the building keep photographing the areas that need change so that they can be a reminder while drafting the main report and also when the report is submitted to the authorities it is easier to make them understand the change required.

Once the survey is over you need to have your photographs developed and prepare a final report to be submitted to the authorities for incorporating the changes.

The final report should be precise with well thought out recommendations. As far as possible, suggest low cost simple solutions, as these solutions are most likely to be implemented by the authorities. But even though a recommendation may be expensive to implement, if it is essential, make that recommendation with suitable reasoning. Also with all recommendation do not forget mention the present measurements along with the ideal measurements. Supplement the final report with the photographs and if possible illustrations so that it is easy for the authorities to understand.

Your role does not end with the submission of the report. Once you have submitted your final report keep following up with the authorities to make sure that the changes in the building are made.

Annexure VIII: Access Audit Form for External Environment

Name of the Building: _____

Address: _____

Telephone: _____ Date of Survey.

Name of Surveyor: _____

A	Car Park	Y/N	Recommendations
i)	Is there an accessible parking for people with disabilities?		
ii)	Is the number of accessible parking enough ⁷		
iii)	Is accessible parking within 50.00m from the building?		
iv)	Is there accessible indoor parking located closest to accessible elevators?		
v)	Is the international symbol of access imprinted on the parking?		
vi)	Is there a vertical, visible signboard indicating that the lot is for use by a disabled driver only?		
vii)	Do curb ramps connect accessible parking spaces with side curbs?		
viii)	If there are no curb cuts, then are there tactile markings at least 600mm wide to separate pathway from the parking?		
ix)	Or, are there pre-cast wheel stops or bollards to separate pathway from the parking?		
x)	Is the size of the parking at least 4800mm x 3600mm?		
xi)	Is the drop off area marked by signage?		
xii)	If the drop off area has a curb, is there a curb cut leading to the pathway?		
xiii)	If the drop off area has no curb, is there warning for the benefit of visually impaired?		
B	Taxi Stand	Y/N	Recommendations
i)	Is there a taxi stand near the building?		
ii)	If there is a curb at the taxi stand, is there a curb cut leading to the pathway?		
C	Mailboxes	Y/N	Recommendations
i)	Is the mail box slot mounted at a maximum height of 1200mm?		
D	Water cooler	Y/N	Recommendations
i)	Is the height of the water cooler tap between 750mm to 900mm?		
ii)	Is it easy to operate the cooler tap?		
iii)	Is there proper drainage to keep the area dry around the water cooler?		
E	Pathways	Y/N	Recommendations
i)	Is the pathway clear of all obstructions?		
ii)	Is the pathway clear of steps and stairs?		
iii)	Are there guiding lines installed along the line of travel?		
iv)	Are there warning blocks around any obstruction?		
v)	Is the path at least 900mm wide?		
vi)	Is the surface level, smooth and non slippery?		
vii)	Does the pathway have a different color and texture than the adjacent surface?		
viii)	Are all manholes placed outside the pedestrian path travel?		
ix)	Are the grating openings narrow, not more than 13mm?		
x)	Are the gratings perpendicular to the direction of travel?		
xi)	Is there an edge protection along the pathway minimum of 13mm?		

F	Curb cuts	Y/N	Recommendations
i)	Are curb ramps provided at all level differences between the road surface and pathway level: <ol style="list-style-type: none"> 1. Pedestrian crossings? 2. Accessible parking space? 3. Building entrances? 		
ii)	Are curb ramps located at each corner of street intersections?		
iii)	Is every curb ramp faced by another curb ramp on the opposite side of the street?		
iv)	Is the slope of the curb ramp no more than 1:12?		
G	Pedestrian crossings	Y/N	Recommendations
i)	Is the road surface even and slip-resistant at pedestrian crossings?		
ii)	Are pedestrian traffic lights installed?		
iii)	Do traffic lights have both audible and visual signals?		
iv)	Are push-buttons located at a maximum height of 1200mm?		
v)	Do traffic islands have street-level pathways cut through them with a minimum width of 1500mm?		
H	General obstructions	Y/N	Recommendations
i)	Are there any protruding objects within the path of travel not been detected by a sightless person with a cane?		
ii)	Are the protruding objects marked with tactile warning at least 60mm beyond the projection area of the obstruction?		
iii)	Are all overhanging obstructions mounted above a minimum height of 2000mm?		
iv)	Are all obstructions with the path of travel marked with contrasting colors?		

Annexure IX: Access Audit Form for Internal Environment

Name of the Building: _____

Address: _____

Telephone: _____ Date of Survey: _____

Name of Surveyor: _____

A	Main entrance	Y/N	Recommendations
i)	Is the main entrance of the building accessible?		
ii)	Are there any steps at the entrance?		
iii)	Do the steps have a hand railing?		
iv)	Are there railings on both the sides?		
v)	Is there a ramp?		
vi)	Does the ramp have a railing?		
vii)	Is the railing on both the sides?		
viii)	Is the clear door width at least 900mm?		
ix)	Can the entrance door be operated independently?		
x)	Is the height of the door handle between 900mm and 1100mm?		
xi)	Does the accessible entrance permit access to an elevator?		
xii)	Is the accessible entrance clearly identifiable?		
xiii)	Is the landing surface non-slippery?		
B	Doors	Y/N	Recommendations
i)	Can the doors be operated without much effort?		
ii)	Do automatic doors have sufficiently long opening intervals?		
iii)	Are push buttons for automatic doors located at a maximum height of 1200mm? (not exceeding 1300mm)		
iv)	Is there sufficient space beside the latch side of the door? (minimum 300mm)		
v)	Are accessible doors placed adjacent to revolving doors and turnstiles?		
vi)	Are glazed doors marked with a colored band at eye level?		
vii)	Is minimum clear width of interior doors at least 800mm?		
viii)	For double leaf doors, is the width of one of the leaves at least 800mm?		
ix)	Do doors fitted with spring closers have an extra pull handle?		
x)	Is manual door hardware (handle, lock, pulls etc.) located no higher than 1200mm (not exceeding 1400mm)?		
xi)	Are door mats flush with the floor surface and secured to the floor at all edges?		
xii)	Is the threshold no more than 20mm high and beveled?		
C	Corridors	Y/N	Recommendations
i)	Is the minimum unobstructed width of corridors at least 900mm?		
ii)	Does the corridor width allow maneuvering through doors located along its length?		
iii)	Are differences in level bridged by ramps or lifts?		
iv)	Can a sightless person with a cane detect all protruding objects within the corridor?		
v)	Are all overhanging obstructions mounted at a minimum height of 2000mm?		
vi)	Can a person with partial sight easily identify all obstacles in the corridor?		

D	Elevators	Y/N	Recommendations
i)	Is there an accessible path leading to the elevator?		
ii)	Is the clear door opening width more than 900mm?		
iii)	Are the minimum internal dimensions of the elevator at least 1200mm x 1400mm?		
iv)	Is the height of the call button (outside the lift) between 900mm and 1100mm?		
v)	Is the control panel placed at a height of between 900mm and 1200mm from the floor level?		
vi)	Is there an audio and visual system installed in the lift indicating arrival at a floor?		
vii)	Are there Braille/raised numbers (for visually impaired persons) to use the control panel?		
viii)	Is the elevator provided with hand rails on three sides?		
ix)	Are the handrails mounted at a height between 800mm and 900mm?		
x)	Is the elevator door easy to identify?		
xi)	Is the emergency intercom usable without voice communication?		
xii)	Are there tactile or Braille instructions for the communication system?		
xiii)	Is the door opening/closing interval long enough?		
xiv)	Is the finish of the elevator floor skid-resistant?		
E	Stairs	Y/N	Recommendations
i)	State where the stairs are located		
ii)	Is the minimum width of stairs 900mm?		
iii)	Are there continuous handrails on both sides of the stairs at the height of 800mm to 900mm?		
iv)	Is a handrail installed in the center if the stair width is more than 3000mm?		
v)	Is there a landing located after the stairs cover a level difference of more than 2500mm?		
vi)	Is the landing length not less than 1200mm?		
vii)	Do the stairs have a nosing?		
viii)	Is the nosing of a different texture or color to be identifiable by visually impaired persons?		
ix)	Are there warning blocks installed at the beginning and end of all flights?		
x)	Is the location of the stairs clearly identifiable?		
xi)	Is the location of emergency stairs clearly identifiable?		
xii)	Do treads have a non-slip surface?		
F	Slope ramps	Y/N	Recommendations
i)	Is there a ramped route next to the stairs?		
ii)	Is the ramp gradient no steeper than 1:12?		
iii)	Is there a landing of at least 1200mm length, at 10,000mm intervals?		
iv)	Is there a landing at every change in direction?		
v)	Is there a landing at top and bottom of every ramp?		
vi)	Are there continuous handrails on both sides at the height of 800mm to 900mm?		
vii)	Is the width of the ramp at least 900mm?		
viii)	Is the surface of the ramp slip-resistant?		
ix)	Is the location of the ramp clearly identifiable?		
x)	Is there an edge protection on both sides of the ramp?		

G	Handrails	Y/N	Recommendations
i)	Are handrails, mounted at a height between 850mm and 900mm?		
ii)	Are handrails easy to grip?		
iii)	Are railings securely attached?		
iv)	Do handrails extent horizontally between 300mm and 450mm at the top and bottom of every staircase or ramp?		
v)	Are the endings of the handrail grouted into the ground or - turned downwards?		
vi)	Are handrails continuous throughout the full length of ramps and stairs?		
vii)	Are low windows at landings protected by railings?		
viii)	Is the space between the handrail and the wall no less than 40mm for smooth walls, and 60mm for rough textured walls?		
ix)	Are the handrails painted in contrasting colors to be easily identifiable?		
x)	Are there tactile strip identifications on the handrails for emergency stairs?		
H	Restrooms	Y/N	Recommendations
i)	Are there separate restrooms for disabled people?		
ii)	Are the restrooms easily identifiable?		
iii)	Is there sufficient space inside the restrooms to maneuver a wheelchair?		
iv)	Do individual washrooms have clear dimensions between opposite walls of not less than 1750mm?		
v)	Are water closets and bidets mounted at a height between 450mm and 500mm?		
vi)	Is the space between the toilet seat and the cl6set adjacent wall fitted with a grab bar between 450mm and 500mm?		
vii)	Is the accessible wash basin mounted at a height between 800mm and 850mm?		
viii)	Is the lower edge of the mirror positioned at a height not exceeding 1000mm?		
ix)	Are the accessible showers and bathtubs provided with folding seats?		
x)	Is the floor of tub slip-resistant?		
xi)	Do grab bars have a diameter between 30mm and 40mm?		
xii)	Do wall mounted grab bar have a clearance between 35mm and 40mm?		
xiii)	Are grab bars non-slippery?		
xiv)	Can the grab bars withstand the load?		
xv)	Are faucets easy to grip and operate with one hand?		
xvi)	Are shower fixtures with at least 1500mm long hoses?		
xvii)	Are hot water pipes insulated or covered?		
xviii)	Is the rest room equipped with an alarm system?		
xix)	Can doors be locked from inside and releasable from outside under emergency situations?		
xx)	Are flushing arrangements, dispensers and toilet paper mounted between 500mm and 1200mm?		
xxi)	Are flushing mechanisms easy to operate?		
xxii)	Is the floor material skid-proof, well drained and waterproofed?		
xxiii)	Do pivoted doors open outwards?		

I	Eating outlets	Y/N	Recommendations
i)	Is the eating outlet identifiable?		
ii)	Is the eating outlet accessible to people with disabilities?		
iii)	Is there a circulation path of at least 900mm wide to allow a wheelchair user to move around the eating outlet?		
iv)	Are the cash and service counter height below 850mm?		
v)	Is the table accessible with a height of 750mm to 850mm and knee space of 750mm wide and 480mm deep?		
vi)	Do the tables with fixed stools have accessible spaces for wheelchairs?		
J	Public telephones	Y/N	Recommendations
i)	Are there public, telephones accessible to wheelchair users?		
ii)	Is there at least one telephone in the building equipped with a loop induction unit?		
iii)	Are the numerals on the telephone raised to allow identification by touch?		
iv)	Is there proper signage directing to the public telephone?		
v)	Are the height of the operable parts of the telephone between 800mm and 1200mm?		
vi)	Is there a clear knee space of more than. 750mm?		
K	Resting facilities	Y/N	Recommendations
i)	Where there are large spaces are resting facilities provided between 100.00m to 200.00m?		
ii)	Is there an adjoining space for a wheelchair next to benches and public seats?		
iii)	Are public seats between 450mm and 500mm height?		
iv)	Are the tops of tables between 750mm and 900mm height?		
v)	Are knee spaces at accessible tables at least 750mm high, 900mm wide and 480 mm deep?		
L	Reception & information	Y/N	Recommendations
i)	Are the counters easily identifiable?		
ii)	Is the counter height between 750mm to 900mm?		
iii)	Is a part of the counter lowered to accessible height?		
iv)	Is a loop induction unit installed at the counter?		
v)	Are there tactile pictographic maps of the building near the counter?		
vi)	Is the counter well illuminated?		

Annexure X: International Symbol of Access

1. The form of the Symbol of Access for people with disabilities should comply with the following:-
 - ✓ The Symbol should consist of two elements, namely a symbolised figure in a wheelchair and a plain square background;
 - ✓ The proportional
 - ✓ The colour of the figure should be white on a blue background; and
 - ✓ The Symbolised figure should face to the right.



2. The Symbol should be displayed:-
 - Outside the building to identify buildings with accessible facilities; and
 - At areas where facilities are provided for people with disabilities.
3. The Symbol should be used to identify accessible features and facilities by people with disabilities but should not be limited to the wheelchair users.

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